

# 2012 ANNUAL REPORT

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## MISSOURI STRATEGIC INITIATIVE FOR ECONOMIC GROWTH



**Submitted to the Steering  
Committee**

**By**

**The Strategy Implementation Teams**

**And**

**Industry Councils**

**February 12, 2013**

# 2012 ANNUAL REPORTS

## MISSOURI STRATEGIC INITIATIVE FOR ECONOMIC GROWTH

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## FORWARD

### MISSOURI STRATEGIC INITIATIVE FOR ECONOMIC GROWTH

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TO: Steering Committee

FROM: David Kerr, Chair

DATE: February 12, 2013

On April 11, 2011, the Final Report of the Strategic Initiative for Economic Growth was completed and delivered to Governor Nixon. One of the recommendations made by the Steering Committee was to create “Industry Councils” and “Strategy Implementation Teams” to fulfill the actions of the report. This document represents the first annual report of the Councils and Teams.

I would ask that you review these reports and submit comments and suggestions prior to **February 28** to Mike Downing at [mike.downing@ded.mo.gov](mailto:mike.downing@ded.mo.gov).

#### **Industry Councils – Purpose and Assignment:**

1. Assess the current issues and problems or obstacles for growth of the industry in Missouri.
2. Develop recommendations that best resolve the identified problems or obstacles.
3. Develop an annual report to be submitted to the Steering Committee and Governor.

#### **Strategy Implementation Teams – Purpose and Assignment:**

1. Develop action steps for each tactical plan, including identifying which entities or persons should be involved, what resources are needed for proper implementation, the proper steps for implementation, and establish a timeline for completion.
2. Develop an annual report to be submitted to the Steering Committee and Governor which would include recommendations for additions or revisions to the tactical plans.

One of the other actions important in this process is to monitor and support the development of economic development strategic plans by our local and regional partners. In 2012, the following were completed:

- The Kansas City Economic Development Corporation completed their “AdvanceKC” plan, which can be accessed at [www.advancekc.org](http://www.advancekc.org).
- The Joplin Regional Prosperity Initiative completed the “Joplin Regional Economic Development Strategy”, which can be accessed at [www.joplinregionalstrategy.com](http://www.joplinregionalstrategy.com).

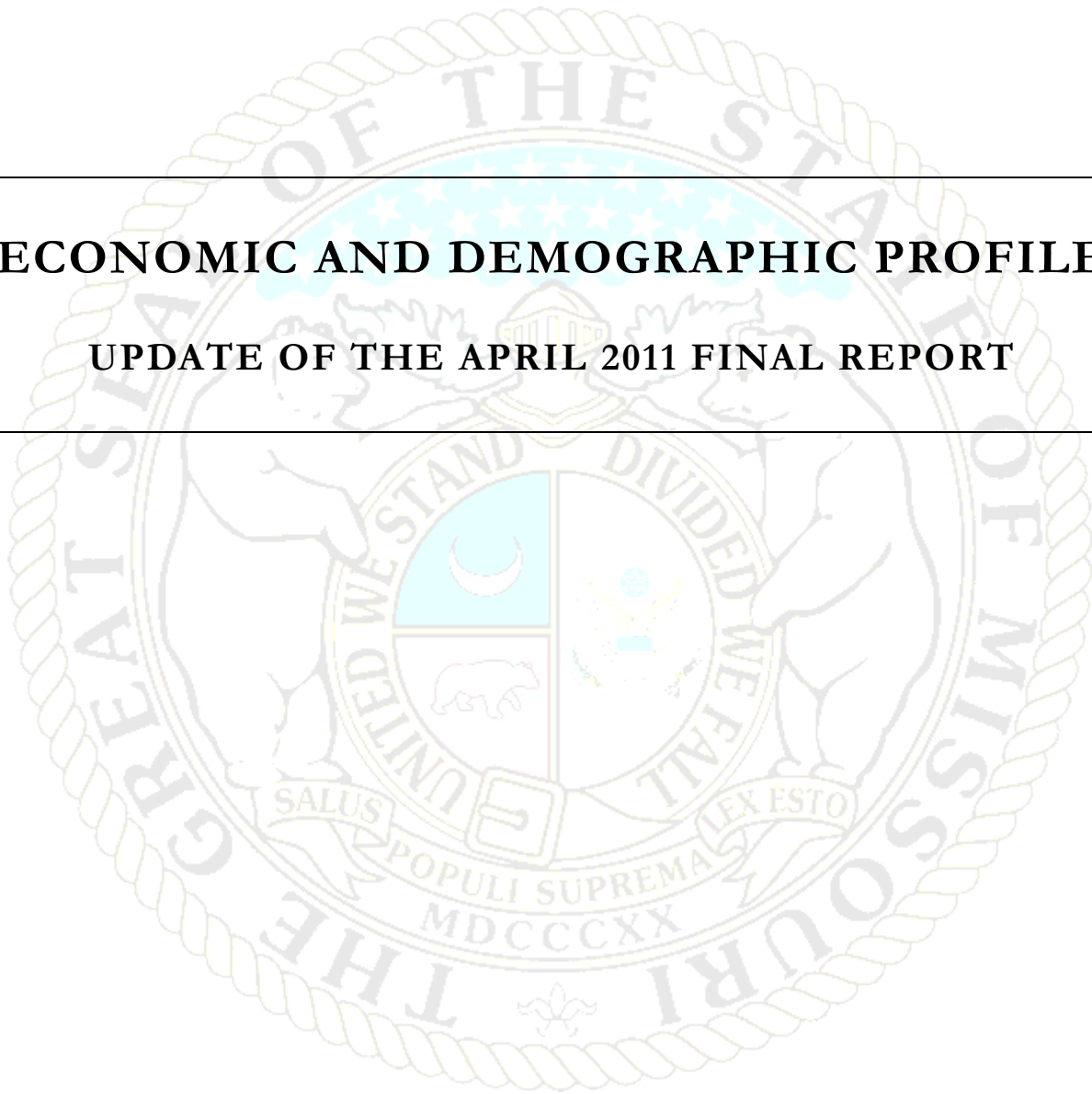
If you need to refer to the SIEG Final Report, Targeted Industry Cluster Report, or other documents related to the initiative, please visit [www.ded.mo.gov/Strategic.aspx](http://www.ded.mo.gov/Strategic.aspx).

Thank you for your continued assistance for this initiative.

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**ECONOMIC AND DEMOGRAPHIC PROFILE**  
**UPDATE OF THE APRIL 2011 FINAL REPORT**

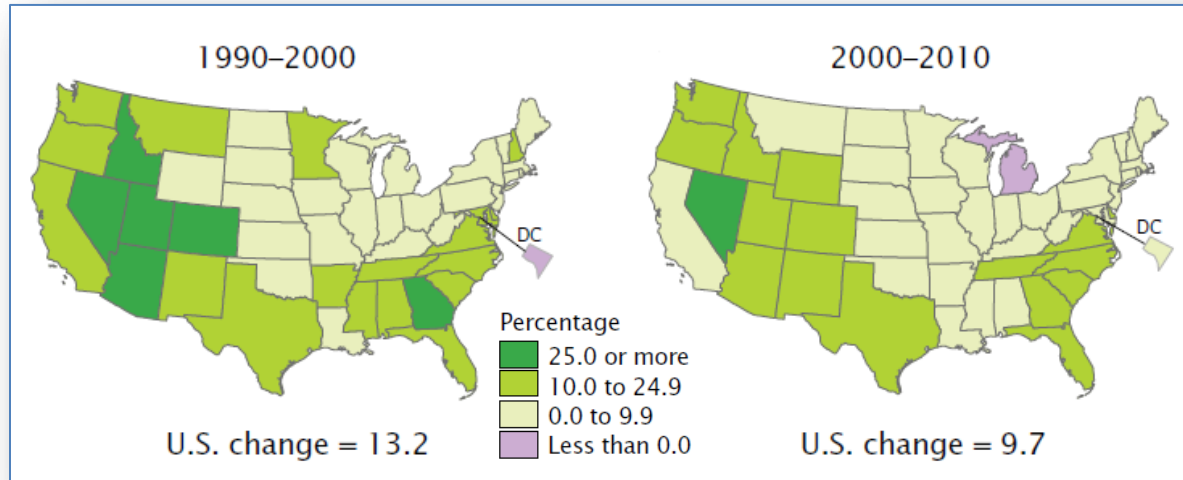
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## 1. Population Change:

	Missouri	% Change*	United States	% Change*
2010	5,988,927	0.7%	308,745,538	0.9%
2000	5,595,211	0.9%	281,424,602	1.3%

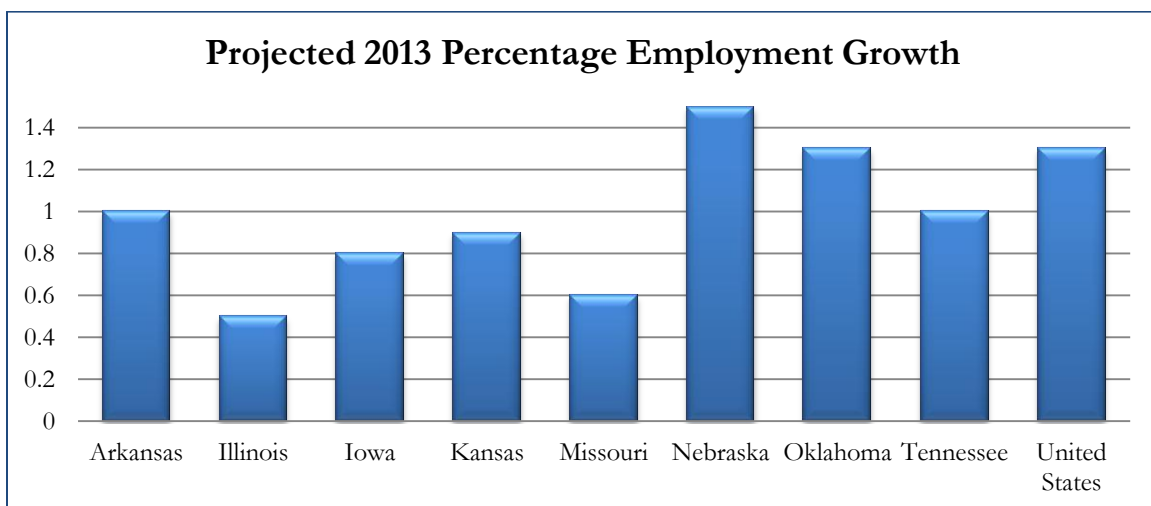
\* Average Annual Percent Change from prior 10 years. Source: US Census.



## 2. Employment Growth (Annualized % Change)

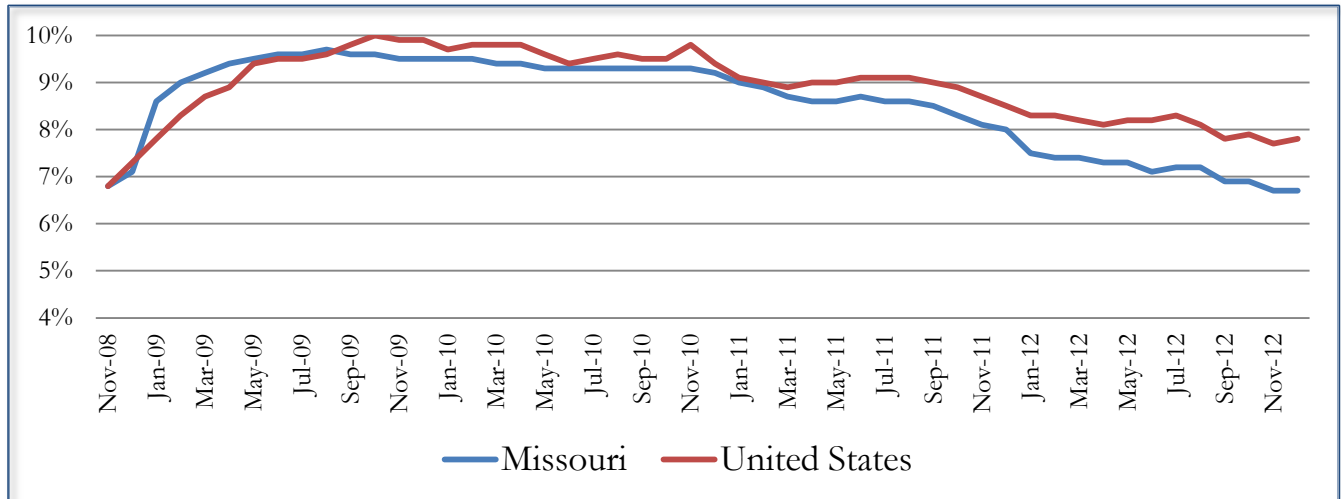
	Missouri	United States
2011	0.0%	1.2%
2012 (estimated)	0.2%	1.4%
2013 (projected)	0.6%	1.3%

Source: Moody's Analytics



### 3. Unemployment Rate

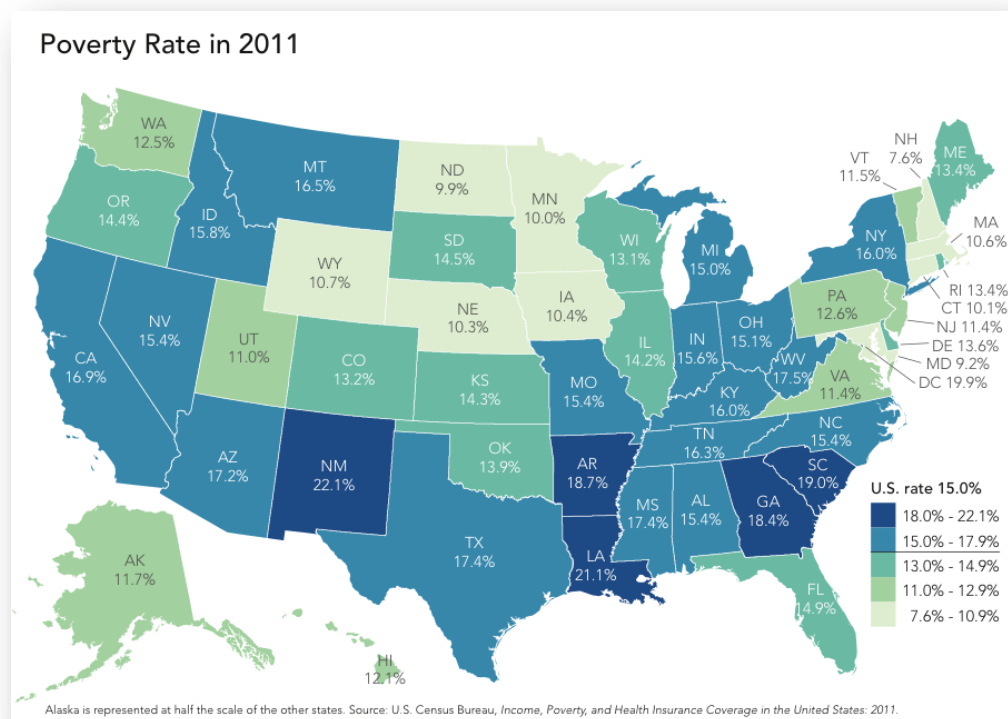
	Missouri	United States
<b>Dec. 2012</b>	6.7%	7.8%
<b>Nov. 2009</b>	9.5%	9.9%



### 4. Poverty Rates

	Missouri	United States
<b>2011</b>	15.4%	15.0%
<b>2000</b>	11.7%	11.3%

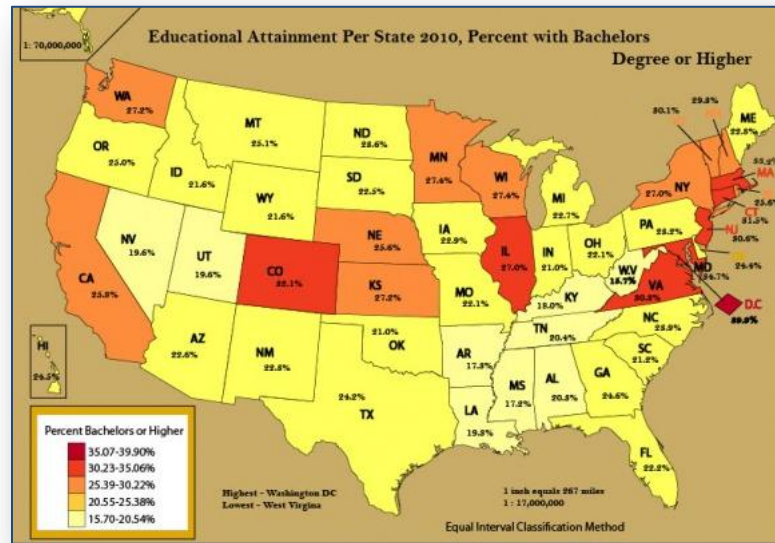
Source: US Bureau of Economic Analysis



## 5. Educational attainment of population ages 25 to 34 – 2011

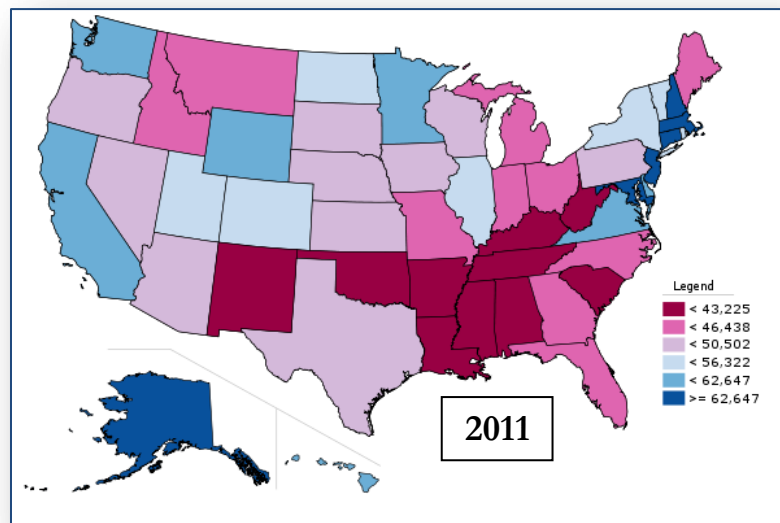
	Less than HS	High School	Associates Degree	Bachelors Degree	Masters, Professional
<b>Missouri</b>	10%	50%	9%	22%	10%
<b>United States</b>	12%	48%	9%	22%	9%

<http://datacenter.kidscount.org/data/acrossstates/Rankings.aspx?ind=6294>



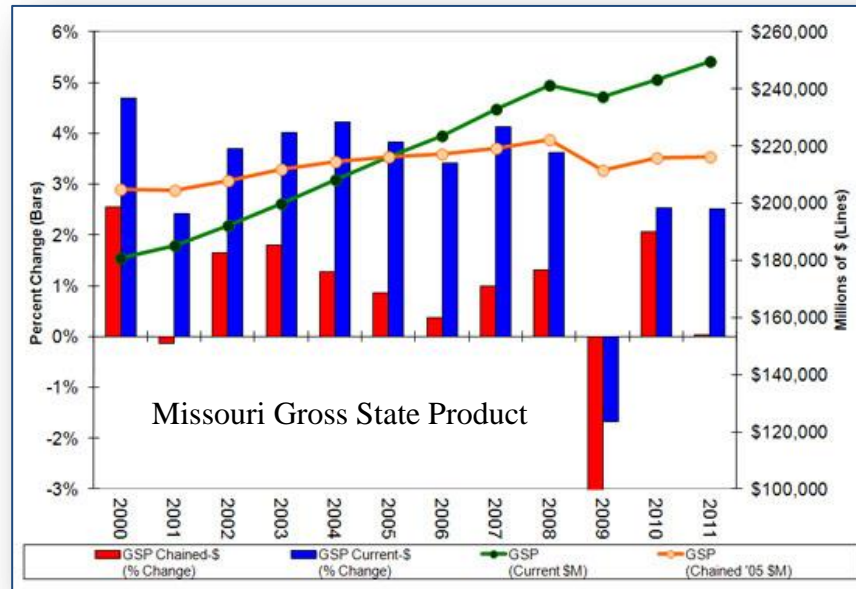
## 6. Real Median Household Income

	Missouri	United States
<b>2011</b>	\$46,184	\$49,445
<b>2000</b>	\$54,151	\$53,252



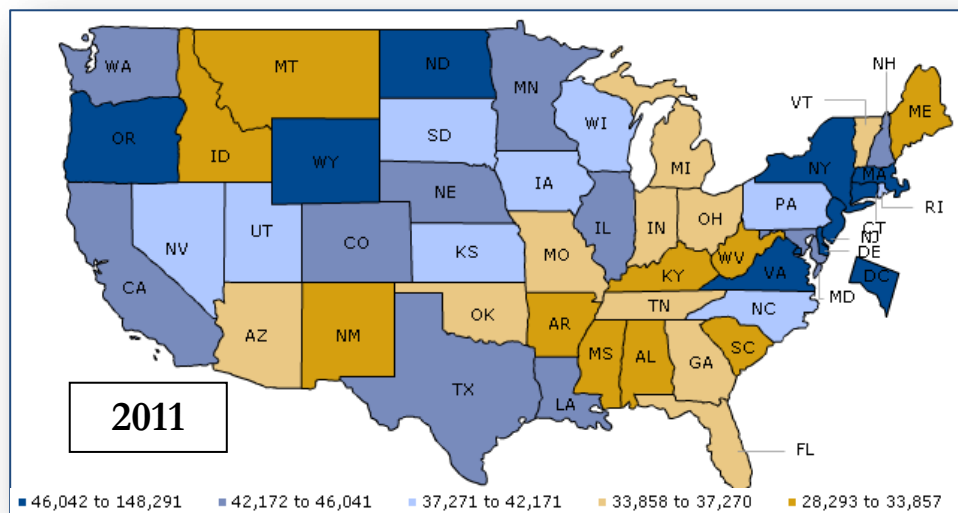
7. Real Gross State Product, in billions (chained 2005 dollars):

	Missouri	United States
2011	\$216.1	\$13,109
2007	\$219.3	\$13,103



8. Per Capita Real Gross State Product

	Missouri	United States
2011	\$35,952	\$42,070
2007	\$37,304	\$43,633



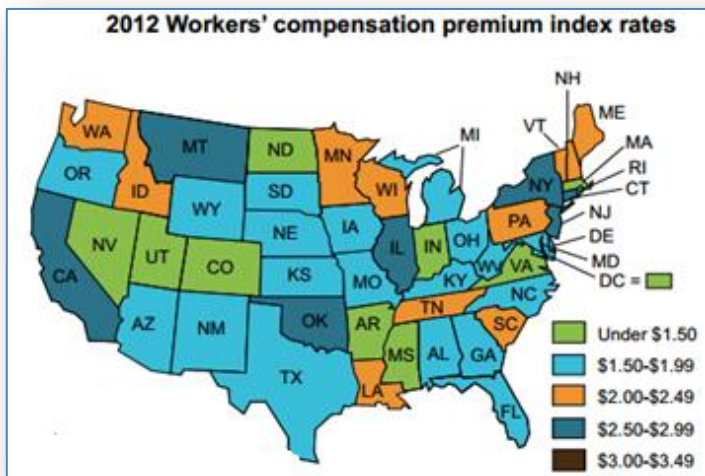


## 9. Missouri Exports

2009	2010	2011	2012(3 Qtrs.)
\$9,522,229,617	\$12,925,559,774	\$14,153,831,541	\$10,719,606,166

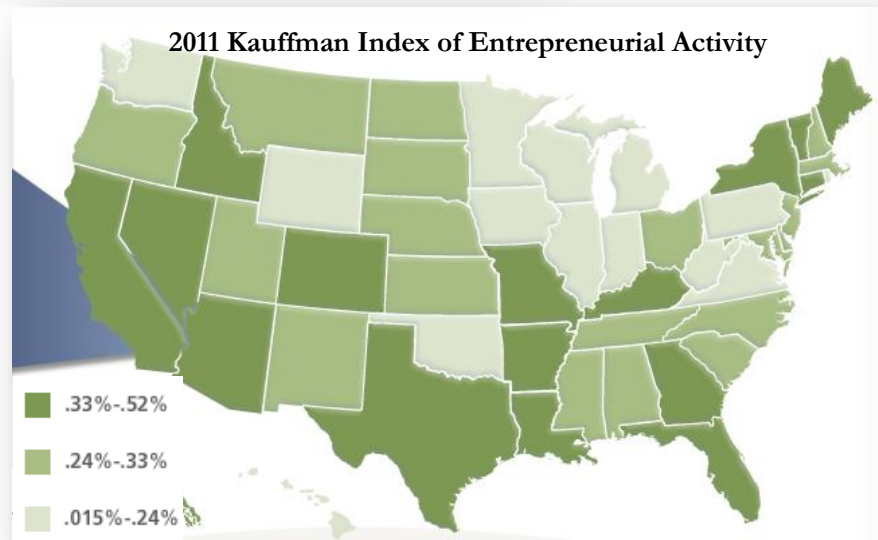
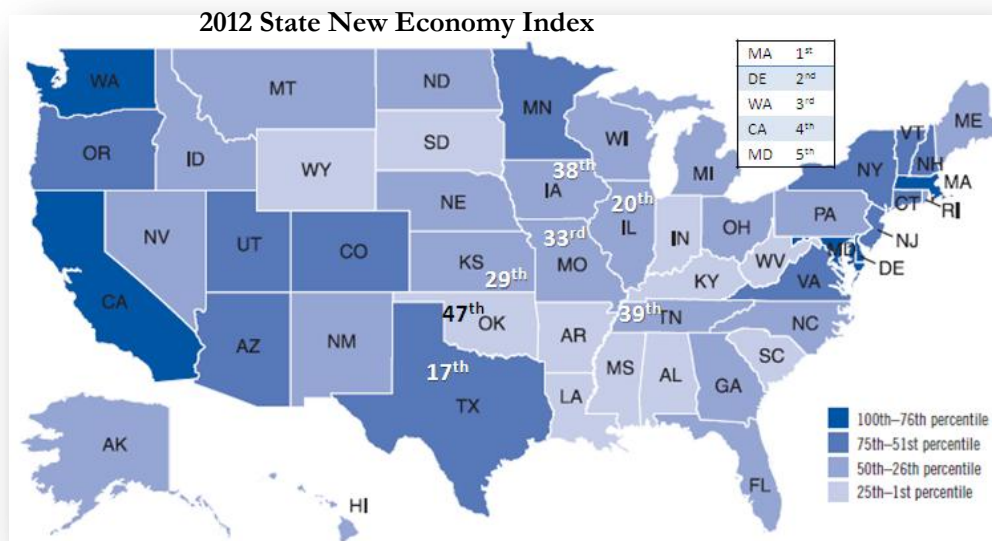
## 10. Business/Tax Climate Ratings/Rankings, 2011-12

Name	Source	MO Ranking
Top Pro-Business States, 2012	Pollina Real Estate	9 <sup>th</sup>
Workers' Comp Premium Index Rates, 2012	Oregon Dept. of Consumer and Business Services	16 <sup>th</sup>
Business Tax Index, 2012	Small Business & Entrepreneurship Council	15 <sup>th</sup>
State Business Tax Climate Index, FY-13	Tax Foundation	16 <sup>th</sup>
State/Local Business Taxes as Pct. of Gross State Product	Ernst & Young LLP	5 <sup>th</sup>
Lowest Business Energy Costs, 2012	Small Business & Entrepreneurship Council	6 <sup>th</sup>
Best States for Business, 2012	CNBC	27 <sup>th</sup>
Lowest Business Costs, 2012	CNBC	12 <sup>th</sup>



## 11. Entrepreneurial/Innovation Ratings:

Name	Source	MO Ranking
Index of Entrepreneurial Activity, 2011	Kauffman Foundation	6 <sup>th</sup>
State New Economy Index, 2012	Information Technology and Innovation Foundation	33 <sup>rd</sup>
Knowledge Jobs (from State New Economy Index), 2012	Information Technology and Innovation Foundation	20 <sup>th</sup>

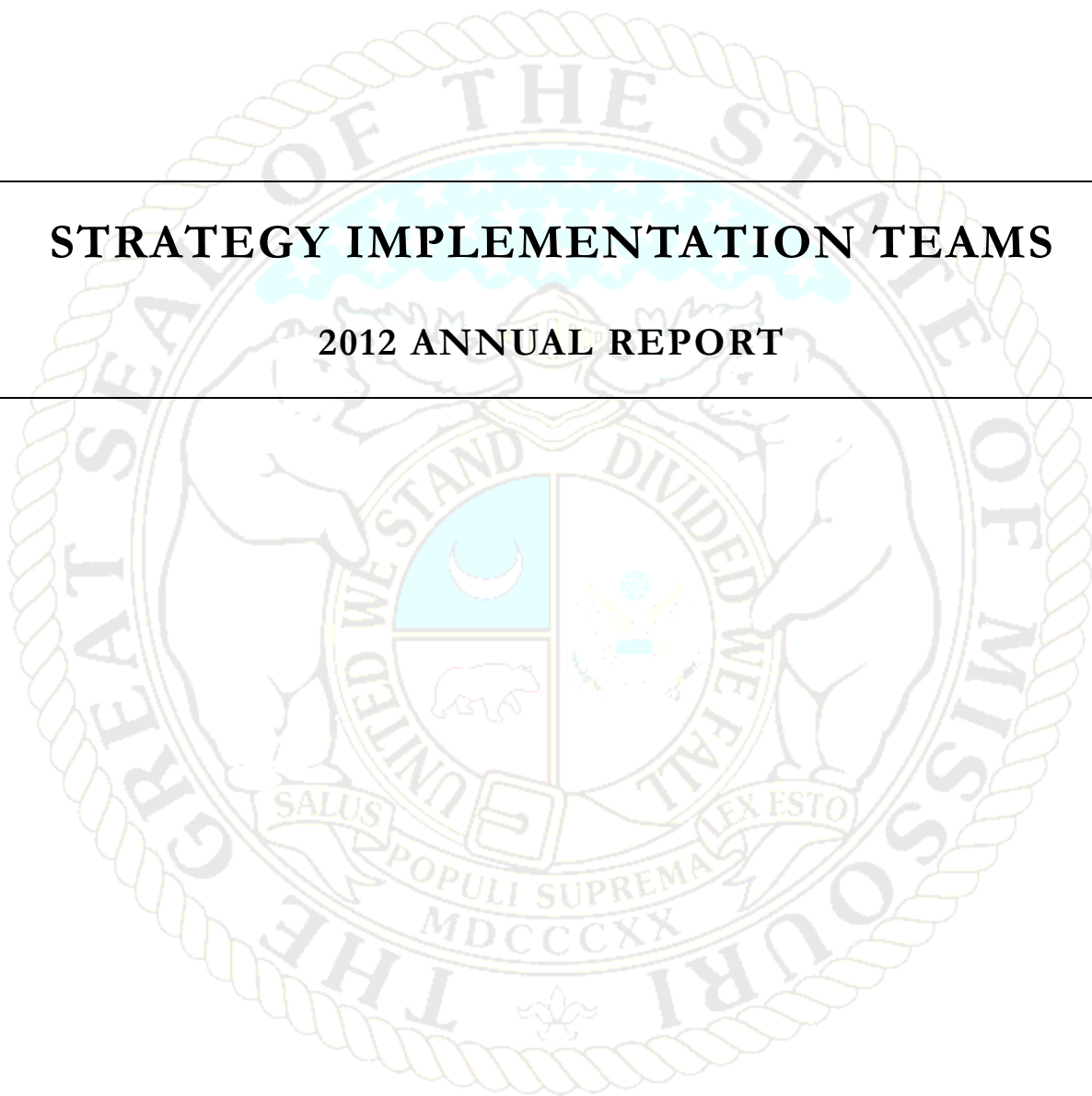


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# **STRATEGY IMPLEMENTATION TEAMS**

## **2012 ANNUAL REPORT**

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## EXISTING BUSINESS DEVELOPMENT

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will support its local developers in the retention and expansion of existing businesses and employers.

**Tactics** (developed by the Steering Committee):

1. **Develop statewide industry councils to help guide Missouri's target-sector development strategies.**

**Actions:**

a. Completed:

- November 21, 2011 – Development of industry councils. Annual reports are included in this document.

2. **Develop a statewide business retention and expansion ("BRE") plan utilizing best practices that provides consistency of approach with enough flexibility to meet unique local and regional needs.**

*(Note: There are approximately 300 local/regional economic developers in Missouri that have as their primary responsibility the retention and expansion of existing businesses. DED is generally in a support role.)* **Actions:**

a. Planned:

- DED and the Missouri Economic Development Council (MEDC) will develop a handbook of best practices for the implementation of a business retention and expansion program for use by MEDC members. Target completion: July 2013.
- DED and MEDC will, subject to obtaining sufficient funding, conduct a survey of targeted existing businesses to determine key issues and needs that could lead to improved retention and expansion efforts. *(Note: Several local/regional ED organizations currently conduct such surveys within their jurisdiction.)* A third-party conducted survey would sample targeted businesses throughout the state in areas that have not already been surveyed. According to MERIC, there are 186,943 existing businesses in the State of Missouri that fit within the SIEG's targeted industry categories. Target completion: December 2013.
- Upon completion of the survey, local/regional economic developers would provide follow-up responses/assistance according to needs identified by businesses in the survey.

3. **Develop a program to provide rural officials and practitioners with development of skill sets that would enable them to better work with businesses to retain and expand employment.** **Actions:**

a. Ongoing:

- The Missouri Rural Development Partners (MRDP), which is a consortium of federal, state, and local economic development organizations, university extension, and other agency officials involved in rural development, has the goals as follows:

- Identify/assess rural Missouri's developmental needs, develop strategies, and facilitate actions for solution.
- Identify barriers which impede the solution of problems in rural areas.
- Assist in establishing strategies for interagency cooperation to deal with the problems facing rural areas in a coordinated fashion.
- Maximize the accessibility of resources and programs to rural Missouri, and,
- Motivate/assist rural communities and citizens to help themselves to stabilize, broaden, diversify, and invigorate their economic bases.

b. Planned:

- MEDC, DED, and Missouri Extension are in the process of collaboration in the development of strategies for rural economic development.

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## FOREIGN TRADE

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will develop a best-in-class foreign trade initiative.

**Tactics** (developed by the Steering Committee):

1. Formalize a program to leverage the international relationships, associations and contacts of Missouri universities' research faculty to identify investment and export opportunities in Missouri's targeted clusters. **Actions:**
  - a. Completed:
    - June 29, 2012: Formalized partnerships with Missouri's public and private research universities to access research faculty for discussions on their previous and current network of relationships with U.S. multinational corporations, foreign-based companies, other researchers, government representatives and policy directors. DED convened a statewide partners meeting which included public and private university representatives, local, state and federal government representatives, and additional policy directors of key statewide and federal institutions.
      - This statewide partners meeting has led to the implementation of monthly conference calls dedicated to exploring trade and investment opportunities through already existing and newly developing relationships.
    - Maintain a current database of potential prospect companies and other high value business development targets to include contact information; area of research and the source of the lead.
      - This action item was completed on July 15, 2012.
      - The database is housed in the DED and will be regularly edited and updated as information is exchanged through Missouri's statewide partners.
2. Assess the need to launch additional Missouri overseas marketing offices. **Actions:**
  - a. Completed:
    - August 2010: Conducted a market assessment and economic analysis of potential countries that would provide the highest transaction flow for Missouri exports and recruitment of foreign direct investment. This action item was completed and identified Brazil, China, and India as key targets.
    - May 2011: In partnership with local and regional economic development organizations, design an awareness campaign to optimize the knowledge and use of Trade and Investment Offices. This action item was completed in May 2011 and helped to initiate the statewide partners roster and opportunities through local and regional MEDC meetings to help to promote the Trade and Investment Offices.

- DED has applied for grant funding through the Small Business Administration under the State Trade & Export Promotion Grant Program for the purpose of establishing additional foreign offices. This action item was completed in September 2011 when the DED was awarded \$977,748 in federal funding from the SBA. The DED's project proposal included funding for new offices in Brazil, China and India.
3. **Develop a trade alliance to coordinate localized, comprehensive early-stage assistance to Missouri-based companies looking to increase exports to foreign markets. Actions:**

a. Completed:

- May 2011: Identified potential service providers in Missouri that could provide early stage export training to potential exporters. The SBDTC network, through its international trade team, was the best suited entity to provide training for new to export and early stage Missouri companies. Export training continues throughout the state.
- June 29, 2012: Leadership of regional EDOs, top exporting firms and staff of export-assistance and training entities was convened to develop the new alliance's mission statement, goals, performance expectations and potential programmatic components. The statewide alliance was branded; and a website and marketing materials were created. The statewide alliance was branded as the "MO STEP=UP" program. Through the website at [www.ded.mo.gov/mostep](http://www.ded.mo.gov/mostep), a variety of information and marketing materials are available.
- September 2012: DED was approved for grant funding from the Small Business Administration under the State Trade & Export Promotion Grant Program (Round 2: 2012) for the purpose of establishing physical offices and hiring full-time staff. Missouri was again awarded federal funding (\$1,017,448) which will help to retain the three offices in Brazil, China and India for another year and allow for the hiring of trade promotion contractors.
- October 2011: Governor's Trade Mission to China:
  - China Council for Promotion and International Trade – Missouri MOI (Memorandum of Intent): \$4.4 billion; Effective: January 1, 2012 – December 31, 2014.
  - Zhejiang Province –Missouri MOI: \$200 million; Effective: January 1, 2012 – December 31, 2014.
  - Xinjiang Province – Missouri MOI: \$200 million; Effective: November, 2011.
  - Company Outcomes: Export Transactions: \$5.8 million; 7 jobs created; 16 jobs retained.
- April 2012: Governor's Trade Mission to Brazil
  - State of Sao Paulo –Missouri MOI: Agreement to Cooperate.
  - Company Outcomes: Export Transactions: \$1.350 million; 4 jobs created; 12 jobs retained.

b. Considered:

- Determine the feasibility of opening satellite export-assistance offices or stand-alone centers in Missouri regions without existing support capacity. This action item was determined infeasible due to lack of resources. Export assistance is provided in a strategic method throughout the state and available from each statewide partner organization.



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## INFRASTRUCTURE

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will provide the infrastructure necessary for companies and communities to be successful.

**Tactics** (developed by the Steering Committee):

1. **Market, leverage and enhance existing efforts and tools, specifically Missouri's statewide broadband initiative and the Missouri Certified Sites Program. Actions:**
  - a. Completed/Ongoing:
    - Continued promotion of Missouri Certified Sites and MOBroadbandNow.
    - Continued cooperation with Kansas City interests in promoting the Google fiber initiative.
2. **Develop a state-funded Authority with broad statutory powers to support high-impact infrastructure projects. Actions:**
  - a. Completed:
    - The Team has met three times receiving presentations from eight entities regarding successful programs that are or would be necessary components of a statewide initiative to move forward to address Missouri's significant infrastructure needs. In addition, the team has reviewed model infrastructure bank examples in place in California and Chicago, Illinois.
  - b. Planned:
    - Appoint two or more subgroups of the Team to work independently to:
      - Provide a recommended infrastructure bank model (or hybrid) incorporating project prioritization criteria from those reviewed and team discussion;
      - Identify and recommend sourcing and tools to fund new, upgraded or replacement infrastructure. By necessity, given the current economy, these recommendations will likely include the caveat "at such time funding becomes available"; and,
      - Propose potential locations to house an infrastructure bank when it is established (funded).
3. **Support local capacity-building by assisting Missouri communities with the development of strategic vision plans. Actions:**
  - a. Completed:

- Since April 2011, DED has participated in the development of strategic economic development plans with the City of Kansas City, City of Lee's Summit, Jefferson City Chamber, and Joplin Chamber.
- The University of Missouri's Extension Community Economic and Entrepreneurial Development program (ExCEED) program partners with rural communities to identify and implement new strategies for community economic development.

**4. Support existing efforts to develop regional distribution hubs for key foreign markets. Actions:**

a. Planned:

- Determine if there are international relationships that could be leveraged or initiated to take better advantage of distribution facilities such as air or water ports in the state.

Other discussion has focused on the need for established criteria (consistent with DED's mission), a formula or matrix for prioritization of proposed projects and incorporating existing program resources into the mix. The primary issues all levels of government are coping with are significantly reduced revenues and lack of funding for basic infrastructure repair, replacement or expansion to accommodate growth.

Missouri's strengths include experienced development practitioners in government, quasi-governmental and private industry and programs with successful track records of delivering products and services to facilitate development. Weaknesses include a lack of seed money, reduced or eliminated program funds, and the lack of a functioning infrastructure bank.

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## INNOVATION/TECHNOLOGY

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will invest in technology and innovation to attract, launch, and sustain the growth companies of the future.

**Tactics** (developed by the Steering Committee):

1. **Develop a Science and Technology/Innovation Fund in Missouri to facilitate the creation of best-practice capital-provision, support and infrastructure-development programs and projects. Actions:**

a. Completed:

- Missouri IDEA Fund, administered by the Missouri Technology Corporation, is a \$20 million science and technology/innovation co-investment fund. The funds were provided from the US Department of Treasury's "State Small Business Credit Initiative". Through 5 competitive rounds, 119 applications for funding have been received requesting over \$108 million. The MTC Board has approved 56 applications totaling over \$16 million. Of those authorized projects, 31 investments have closed disbursing \$9.2 million in financing which has generated an additional \$27.4 million in third-party investment.
- Given the success of the IDEA program, Governor Nixon has transferred an additional \$4 million to the IDEA Funds from the Grow Missouri Loan program. The MTC is currently reviewing a 5<sup>th</sup> round of investments from a pool of 14 applicants requesting nearly \$2 million.
- The "MOSIRA" legislation was passed during the 2011 special legislative session and signed into law by the Governor. The legislation was subsequently challenged in court on a technicality. Implementation of MOSIRA is on hold awaiting a ruling by the Missouri Supreme Court. Based on timing of that ruling, a MOSIRA bill without the provision in question may be pursued in the 2013 legislative session. Little progress was made on the creation of an angel investment tax credit or research and development tax credit. These initiatives should continue to be explored during the 2013 legislative session.

b. Planned:

- Pursue appropriation authority for funding to continue the IDEA Funds and Missouri Building Entrepreneurial Capacity Program.

2. **Provide for a research-and-development tax credit in Missouri. Actions:**

a. Planned:

- Examine best models for a R&D incentive program, and if positive, develop draft legislation.

3. **Provide an Angel investment tax credit in Missouri. Actions:**

a. Planned:

- Legislation has been proposed in the past two sessions of the Missouri legislature, but has not passed. It is likely it will be proposed in the 2013 session.

4. **Attract federal and non-profit research centers and institutions to Missouri.** (Transferred from “Marketing”.) **Actions:**

a. Proposed:

- The Missouri Technology Corporation, the Research Alliance of Missouri (RAM), and private sector R&D companies should consider an ongoing process that will identify and solicit opportunities for new research activities.

**Other Recommendations:**

1. Revise tactic 1:

- a. Include the word “sustain” to read “Develop and sustain a Science and Technology/Innovation Fund...”

2. Proposed new tactic:

- a. Improve communication within Missouri and outside of the state regarding the value and strength of Missouri’s technology and innovation assets and initiatives.
  - Related action items include producing a data driven report of results and benchmarks in other states, public education efforts and collaboration and support of private sector/regional initiatives to achieve the Technology/Innovation strategy.

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## MARKETING/ATTRACTION

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will aggressively market the state to domestic and select international audiences.

**Tactics** (developed by the Steering Committee):

**1. Review and optimize existing economic development marketing programs. Actions:**

a. Completed:

- The goals of the Missouri Partnership’s annual marketing plan are to raise and enhance the profile of Missouri’s business climate, as well as to generate opportunities (i.e. “leads”) for Missouri to be considered for new business-investment projects.
- The Missouri Partnership has continued to evaluate and update the various approaches it uses in promoting Missouri as a business location. Achieving an optimal mix of marketing tactics – including paid and earned media, industry events, and consultant outreach – is the focus of the Partnership’s annual marketing and business-development planning and budgeting process.

**2. Promote rural Missouri as a “farm-shoring” location for technology and services companies. Actions:**

a. Ongoing:

- The Missouri Partnership continues to work with Missouri’s rural communities in targeting business-recruitment opportunities in the “rural sourcing” (aka “farm shoring”) industry, namely in the area of financial/professional services and IT operations.

#### Summary

The Marketing Implementation Team (MIT) has completed all scorecard tactics and actions. Additionally, the MIT has developed metrics for tracking progress towards accomplishing its strategic directive. The Missouri Partnership will continue to serve as the primary vehicle for implementing this initiative.

#### Tactics and Actions

The Partnership has continued to evaluate and update the various approaches it uses in promoting Missouri as a business location. Achieving an optimal mix of marketing tactics – including paid and earned media, industry events, and consultant outreach – is the focus of the Partnership’s annual marketing and business-development planning and budgeting process. The goals of the Partnership’s annual marketing plan are to raise and enhance the profile of Missouri’s business climate, as well as to generate opportunities (i.e. “leads”) for Missouri to be considered for new business-investment projects.

Additionally, the Partnership continues to work with Missouri's rural communities in targeting business-recruitment opportunities in the "rural sourcing" (aka "farm shoring") industry, namely in the area of financial/professional services and IT operations.

### **Performance Metrics, Goals, and Methods for Measuring Progress**

The MIT developed the following metrics and goals over the past year:

1. Number of deals in the Missouri Partnership recruitment "pipeline", specifically those deals sourced through the Partnership's marketing and business-development activities.
  - Goal: Continued increase in the number of deals sourced at the state level, which suggests effectiveness in the Partnership's marketing efforts
  - Measurement: Partnership's "sales pipeline" of prospects and active projects
2. Perception of Missouri among C-level corporate executives and business owners.
  - Goal: Continued improvement in perception of Missouri's business climate over the long term, which suggests increased chances for Missouri to be considered for new corporate expansions and investment projects
  - Measurement: Biennial/triennial perception survey of corporate executives and business owners to be commissioned by the Partnership
3. Support of the Partnership's marketing efforts among regional and local economic development partners in Missouri.
  - Goal: Satisfaction from key Partnership stakeholders in terms of how effectively Missouri is being marketed for new investment
  - Measurement: Annual survey of Missouri economic developers gauging satisfaction levels with the Partnership's marketing and business-recruitment efforts

### **Performance Scorecard – Marketing Implementation Team**

<b>Metric</b>	<b>Baseline</b>	<b>Goal by 2016</b>	<b>Change vs. Baseline</b>	<b>% Change</b>	<b>Source</b>
Increase in favorable perception of Missouri's business climate among C-level executives and business owners	2009: 18% favorable 27% unfavorable 55% neutral	50% favorable	32 percentage point increase	277% increase	MO Partnership triennial survey of C-level executives
Proportion of business recruitment deals in the Partnership's sales pipeline "sourced" via the Partnership's marketing and business-development efforts	2011: 39% of deals in pipeline sourced by Partnership (monthly average)	60% of deals in pipeline	21 percentage point increase	154% increase	MO Partnership monthly sales pipeline data
Satisfaction index among regional and local economic development groups re: the marketing of Missouri for new investment	2011: 92.8% satisfaction level among MEDC member organizations	95% satisfaction	2.2 percentage point increase	3% increase	MO Partnership annual stakeholder satisfaction survey data

### Performance Scorecard Update

<b>Metric</b>	<b>Baseline</b>	<b>2011</b>	<b>2012</b>	<b>Goal by 2016</b>
Increase in favorable perception of Missouri's business climate among C-level executives and business owners	2009: 18% favorable 27% unfavorable 55% neutral	N/A (perception survey only commissioned every 3 years)	42% favorable 17% unfavorable 41% neutral  (2012 survey)	50% favorable
Proportion of business recruitment deals in the Partnership's sales pipeline "sourced" via the Partnership's marketing and business-development efforts	2011: 39% of deals in pipeline sourced by Partnership (monthly average)	39% of pipeline deals sourced by Partnership  (2011 pipeline – monthly average)	36% of pipeline deals sourced by Partnership  (2012 pipeline – monthly average)	60% of deals in pipeline
Satisfaction index among regional and local economic development groups re: the marketing of Missouri for new investment	2011: 92.8% "very satisfied" or "satisfied" among MEDC respondents (0% dissatisfied, 7.2% "don't know")	93% satisfaction level among respondents  (Dec. 2011 survey of MEDC members)	91% satisfaction for marketing  95% satisfaction for recruitment  (Dec. 2012 survey of MEDC members)	95% satisfaction

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## SMALL/MINORITY BUSINESS AND ENTREPRENEURSHIP

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will develop a culture that encourages small and minority business development and entrepreneurship.

**Tactics** (developed by the Steering Committee):

1. Quantify, assess, coordinate and potentially enhance existing support programs. **Actions:**

a. Completed:

- The team has determined the best source that identifies/markets support programs is MOSourceLink ([www.mosourcelink.com](http://www.mosourcelink.com)). The team recommends that every public/non-profit/institutional sector agency should market this resource prominently (such as posting the link prominently on their websites) and also not attempt to duplicate this resource.
- The team's analysis has concluded SourceLink lacks recognition by the targeted audience and needs a substantial increase in marketing, as well as the support of agency partners to market this resource.
- Many of the team members are also on the Missouri Business Development Advisory Board, which oversees the activities of the Small Business and Technology Development Centers (SBDTCs) and the Procurement Technical Assistance Centers (PTAC), administered by the University of Missouri Extension.
  - The Missouri Business Development Program completed a strategic plan for 2011-14 for the SBDTCs and PTAC. Much of this plan is based on the findings of Drs. Lyons and Lichtenstein in their book "Investing in Entrepreneurs", concentrating on stages of the "entrepreneurial pipeline" that will have the greatest impact.

b. Planned:

- There are numerous private, non-profit, university, private sector and public sector entities that provide support services to Missouri entrepreneurs and small/minority businesses. Most are very effective and coordinated with other related resources, but some are not. An assessment of the quality or gaps of services of the hundreds of service providers is beyond the resources of the team, and even if it were done, these entities are funded and controlled by numerous sources, few of which are coordinated.
  - The only such attempt to assess the effectiveness and/or coordination of entrepreneurial support agencies in Missouri was a November, 2012 report commissioned by the Kauffman Foundation titled "Entrepreneurial Community in Kansas City: From Fragmented to Collaborative?" Its findings are noted below.
- In the 2012 session of the MO General Assembly, HB 1214 was enacted to direct the SBDTC system to create the "Missouri Entrepreneur Resource Virtual Network" which is designed to "assist in the creation of new Missouri ventures, the growth of existing businesses, and the ability of Missouri entrepreneurs to compete globally". It has been determined by the SBDTC that MOSourceLink meets nearly all the requirements of this



bill. The team recommends that there should be no attempt to duplicate MOSourceLink, and the marketing focus should also be for MOSourceLink.

**2. Integrate entrepreneurship training into state K-12 and higher educational curricula. Actions:**

a. Considered:

- This was the #1 priority identified by the team; however, lack of funding requires that this action be deferred.

**3. Develop a program to assist rural communities with the development and growth of retail businesses. Actions:**

a. Currently Operational:

- The University of Missouri's Extension Community Economic and Entrepreneurial Development program (ExCEED) program partners with rural communities to identify and implement new strategies for community economic development.
- The Missouri Rural Development Partners (MRDP) is a consortium of federal, state, and local economic development organizations, university extension, and other agency officials involved in rural development with the following goals:
  - Identify/assess rural Missouri's developmental needs, develop strategies, and facilitate actions for solution;
  - Identify barriers which impede the solution of problems in rural areas;
  - Assist in establishing strategies for interagency cooperation to deal with the problems facing rural areas in a coordinated fashion;
  - Maximize the accessibility of resources and programs to rural Missouri; and
  - Motivate/assist rural communities and citizens to help themselves to stabilize, broaden, diversify, and invigorate their economic bases.

**4. Provide small-business-development instruction as a component of displaced and state-sponsored worker training. Actions:**

a. Completed:

- This tactic has been implemented by the Division of Workforce Development and the Workforce Investment Boards at Missouri Career Centers around the state.

**5. Adapt and adopt the Lichtenstein and Lyons (L&L) Investing in Entrepreneurs strategy in Missouri's Small Business and Technology Development Centers and Procurement Technical Assistance Centers. Actions:**

a. Completed:

- Implemented by the SBDTCs in May 2011 as part of their strategic plan.

**Recommended Priority Actions:** The team developed a priority listing of recommended actions relative to the development of entrepreneurs, small businesses and minority businesses, as follows:

1. Develop a method to incorporate entrepreneurship training into state K-12 and higher educational curricula. (Same as Tactic 2 above.)
2. The state should create a funding mechanism to facilitate additional private sector early stage seed capital for high growth companies.
  - In early 2011, the Missouri Technology Corporation created the “IDEA” seed and venture capital co-investment funds with \$20 million from the US Department of Treasury’s “State Small Business Credit Initiative” program. Likely, this is one-time funding.
  - Over the past 15 years, there has been several tax credit programs related to this purpose, all of which no longer have funding. Those programs include (with cumulative funding indicated): Certified Capital Companies (\$140 million), Capital Tax Credit (\$13 million), Seed Capital Tax Credit, Research and Development Tax Credit (est. \$6 million), Community Bank Tax Credit (\$6 million), New Enterprise Creation Credits (\$20 million), and New Markets Tax Credits (\$25 million).
3. Improve the current practices of educating/promoting best methods to assist entrepreneurs by community organizations.
  - The Kauffman Foundation has recently begun the promotion of the “[Startup Communities](#)” concept developed by Brad Feld of the Foundry Group, Boulder, CO.
4. Provide a mechanism for additional and consistent state funding for technical and business assistance of effective service providers to the targeted needs.
  - Currently, the following entrepreneurial support entities received the following amounts of state funding, which is subject to annual appropriations:
    - Small Business and Technology Development Centers and MO FAST: \$350,000 in FY-13 state funding (which along with other funding leverages federal funds).
    - Missouri Enterprise Business Development: \$420,000 in FY-13 state funding (which along with other funding leverages federal funds).
    - Several innovation centers received state funding of \$906,768 in FY-13, which leverages other funds.
5. Create a business loan guarantee (or backstop SBA’s guarantee program) for loans less than \$250,000 with a guarantee rate higher than the SBA. The consensus is that many worthy projects cannot obtain funding with the current SBA guarantee rate.
  - The SBA can guarantee as much as 85 percent on loans of up to \$150,000 and 75 percent on loans of more than \$150,000. The team has concluded that a 90% guarantee is necessary to obtain the approval of many banks for projects which are worthy.
6. Develop/improve statewide entrepreneur events and competitions that would coordinate and compliment regional events/competitions.
  - “Start-up Missouri” was formed January 2012 as a series of relationships between entrepreneurs, for entrepreneurs, by entrepreneurs in order to foster stronger entrepreneurial ecosystem throughout Missouri. Startup Missouri is not an independent company or

organization. Startup Missouri is an affiliate of the Startup America Partnership. Startup Missouri is intended to be a network of entrepreneurs in the state serving as a platform to generate common action on collective problems. Missouri entrepreneurs are doing great work in bioscience, technology, and a number of other fields, and together they can continue to grow the entrepreneurial ecosystem in our state.

7. Improve current efforts to seek, identify, and support high growth businesses, which are the types of businesses that have the greatest potential for significant job creation.
  - Two reports on this subject were developed jointly by DED, Missouri SBDTCs, and BRIDG (Business Research and Information Development Group of Missouri Extension) dated 2008 and 2011 titled “Chasing Cheetahs” and “Cheetahs Continue”. Some key findings:
    - Cheetah Firm job growth exceeded 250% when the statewide job growth rate for the period was just over 2 percent.
    - Construction; Retail Trade; Professional, Scientific and Technical Services; and Health Care and Social Assistance constitute the bulk of the state’s cheetah firms.
    - The majority of fast-growth firms chose their current location because it was their home town...proof of the value in encouraging “home grown entrepreneurs.”
    - Linking cheetahs and their current and future business needs with University faculty and research would assist with stronger research results and a higher rate of new products and technologies.
    - Missouri’s cheetahs cited having and hiring skilled workers multiple times as vital to their current and continued success. Evaluation, development, and adjusting programs to prepare Missourians for jobs of the 21st century and sustain a pipeline of well-educated, highly skilled workers are thereby critical.

### **New Research and Reports:**

- “Growing State Economies – 12 Strategies”, July, 2012, National Governors Association.
  - <http://www.nga.org/files/live/sites/NGA/files/pdf/11HEINEMAN12ACTIONS.PDF>
  - The 12 recommended strategies include:
    - Create a competitive tax and regulatory environment.
    - Put entrepreneurial activity at the top of the state’s economic agenda.
    - Distinguish among different kinds of entrepreneurs and businesses—and target policies and resources accordingly.
    - Cast a wide net to find entrepreneurs.
    - Teach entrepreneurship skills and attitudes at all education levels.
    - Build a startup environment and culture.
    - Find the potential high-growth companies and help them grow.
    - Get your entrepreneurs to give back.
    - Help companies open doors to new customers—globally and locally.
    - Reward strong ties among universities, companies, and entrepreneurs.
    - Encourage entrepreneurs and companies, small and large, to build innovation clusters.
    - Build ecosystems, not programs.
- International Economic Development Council: “Unlocking Entrepreneurship”, 2011.
  - [http://www.iedconline.org/Downloads/EDRP/IEDC\\_Unlocking\\_Entrepreneurship.pdf](http://www.iedconline.org/Downloads/EDRP/IEDC_Unlocking_Entrepreneurship.pdf)

- Handbook for economic developers, which includes the following:
  - Introduces the economic development professional to the increasingly urgent need to support entrepreneurship as a necessary strategy;
  - Explains what entrepreneurship is and who entrepreneurs are;
  - Elucidates ways to best support entrepreneurship in the community; and,
  - Provides tools to help economic development professionals strengthen their communities' entrepreneurship culture and build vibrant, resilient economies.
- “Start-Up Act for the States”, January 2012, Kauffman Foundation.
  - [http://www.kauffman.org/uploadedfiles/soe\\_address\\_2012.pdf](http://www.kauffman.org/uploadedfiles/soe_address_2012.pdf)
    - This document is designed to provide state policymakers with a menu (similar to the one provided for the federal government) of initiatives at the state level to reinforce any policies that promote entrepreneurial growth at the federal level. The fundamental premise behind these ideas, as well as this entire document, is that states and their citizens are better off encouraging the formation and growth of new companies, rather than pursuing the timeworn and costineffective approach of competing for the headquarters and/or expansions of existing firms.
  - The recommendations include:
    - Enhancing the supply of entrepreneurs:
      - Experiment with new methods for speeding up the commercialization of innovations developed by faculty at state universities.
      - Create new health insurance options for entrepreneurs.
      - Cut back on occupational licensing requirements (which inhibit the launch of new ventures), possibly moving to certification systems instead.
      - Expand entrepreneurial education at state universities and community colleges.
    - Facilitating the Launch of New Ventures:
      - Reduce the administrative burdens of starting and closing businesses.
      - Embrace digital firm formation.
      - Implement land-use reform at both state and local levels.
      - Allow and encourage disruptive business models in K–12 and higher education.
    - Facilitating the Growth of New Ventures:
      - Closely examine and, if necessary, change policy on non-compete enforcement.
      - Permit credit unions to make limited equity investments in new enterprises.
      - Simplify corporate taxes.
      - Encourage apprenticeship programs for young people in new companies.
    - Fostering a Culture of Entrepreneurship:
      - Welcome immigrants.
      - Foster networks of serial entrepreneurs and third-party investors.
      - Promote and celebrate successful entrepreneurs.
      - Measure entrepreneurial progress
- “Entrepreneurial Community in Kansas City: From Fragmented to Collaborative?”, November 2012, Kauffman Foundation.
  - [http://www.kauffman.org/uploadedFiles/DownloadableResources/Mayer\\_KCpaper\\_FINAL.pdf](http://www.kauffman.org/uploadedFiles/DownloadableResources/Mayer_KCpaper_FINAL.pdf)
  - The analysis of Kansas City’s entrepreneurial community shows that large firms’ role as incubators of entrepreneurial startup companies seems to have diminished, and that there are weak connections between existing large firms and entrepreneurial ventures.

- Entrepreneurial exits in the form of mergers and acquisitions have increased and a small number of cashed-out entrepreneurs are reinvesting their funds and becoming engaged. Yet this process seems to be still in its beginning stages.
  - The region's entrepreneurial community does not exhibit strong networking and collaboration. Rather, entrepreneurial ventures and industry connections exist much like “islands of excellence” without strong interconnections.
  - Although the availability of funding has increased, local entrepreneurs perceive the accessibility and availability of funds—and the capacity local venture investors bring to the table—as limiting factors. At the same time, while the number of investment groups has increased, the investor community is still fragmented and not well connected.
  - The energy and collective effort to improve the Kansas City entrepreneurial community has increased and strengthened significantly since 2006 when a similar study was conducted.
- Numerous other special events have been held throughout the state involving the promotion of entrepreneurship. Most of these events are listed on [www.mosourcelink.com](http://www.mosourcelink.com).

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## TAX AND INCENTIVES

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will optimize its tax, incentive and regulatory policies to best support the growth of high-value target sectors.

**Tactics** (developed by the Steering Committee):

1. Streamline and optimize existing business development tax credits per the recommendations of the Economic Development subcommittee of the Missouri Tax Credit Review Commission. **Actions:**

a. Proposed:

- The “[Missouri Tax Credit Review Commission](#)” was created in 2010 to examine Missouri’s 61 tax credit programs, and recommend actions for greater efficacy and enhanced return on investment. A report was [filed](#) November 30, 2010. On August 29, 2012, the Governor reconvened the Commission to update its recommendations, and they completed their updated [report](#) on December 15 for consideration in the 2013 legislative session.
- The Commission’s 2010 report recommended the replacement of the existing economic development tax credit programs with one flexible, unified program. This unified program could utilize the pool of funding represented by the existing program caps, while at the same time better effectuate the Guiding Principles identified by the Commission as being necessary to create jobs and promote capital investment in the state. The combined annual cap of the new unified economic development program should be a function of the total existing program caps, with due consideration of a reduction of that annual cap equal to any amounts currently obligated for each future year and reflective of the actual average maximums obligated. Specifically, the Commission recommended that the General Assembly adopt a unified economic development credit that follows the guiding principles to replace the existing BUILD, Enhanced Enterprise Zone, Business Facility and Missouri Quality Jobs Programs. In the 2011 legislative session, this recommendation was developed as “Compete Missouri”, and in the 2012 session, it was developed as “Missouri Works”. Both proposals were considered, but neither passed due to unrelated issues in the overall tax credit reform.
- The team recommends the adoption of “Missouri Works” legislation for the 2013 session with particular attention to “lessons learned” from the 2011 and 2012 legislative sessions. The general consensus from the team remained that the proposed legislation known as Missouri Works was representative of the goals of not only the Tax Credit Review Commission, but the professional economic development community, community colleges, and related professional service organizations, as well. The language as written with only slight modifications provides simplicity, efficiency, ease of understanding, competitiveness, and return on investment for incentives used to stimulate business development (job creation and private investment).

2. Work with Missouri’s border-states to one day formalize non-compete policies designed to prevent incentivizing the moving of companies within bi-state metropolitan areas. **Actions:**

a. Completed:

- April 2011: A group of prominent business executives from both Missouri and Kansas provided a letter to Governors Nixon and Brownback asking them to develop a process to eliminate the practice of providing incentives to businesses that relocate jobs across the border.
- b. Considered:
- The team discussed the tactic and actions associated with a non-compete policy designed to prevent incentivizing the movement of companies within bi-state metropolitan areas, including the proposed anti-pirating legislation contained in House Bill 1449, sponsored by Representative T.J. Berry. Further complicating this issue is Kansas' 2012 legislation that will exempt most of the business income on many types of businesses (except C corporations), starting January 1, 2013. The team recommended that no action should be taken at this time pending further review of the impact of the Kansas income tax exemption.

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## WORKFORCE

### STRATEGY IMPLEMENTATION TEAM

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**Strategy:** Missouri will attract, develop and retain a workforce with the education and skills to succeed in a 21<sup>st</sup>-Century economy.

**Tactics** (developed by the Steering Committee):

1. **Develop a tuition forgiveness program for qualifying Missouri high school graduates to attend Missouri colleges and universities. Actions:**

- a. Completed:

- 6/28/11: Department directors from DED, DESE, and MDHE and high level representatives from MCCA (Missouri Community College Association) met to identify action items for this tactic and name a working group and group lead.
- 8/1/12: Funding of \$9 million from DED for “Innovation Campus” grants for higher education institutions and community organizations partnering with Missouri businesses. Innovation Campus funding will provide training in career opportunities for students in high-demand fields, cut the time it takes to earn a college degree, and reduce student debt.

- b. Proposed:

- DHE will take the lead on the development of the details of a tuition-forgiveness program, referencing existing best-practice programs from other U.S. states that have proven to be effective and sustainable. In developing criteria for targeting tuition forgiveness, consideration should be given to occupational areas where greatest return on investment can be realized. Targeted Completion Date: June 2013
- Launch advocacy effort to promote the benefits of the tuition-forgiveness program in public venues, the media and among key legislators and opinion leaders. Targeted Completion Date: December 31, 2013
- Introduce enabling legislation with the chosen programmatic parameters. Targeted Completion Date: January 1, 2014
- Identify private sector funding sources in targeted industries to promote public/private partnerships that can result in innovative learning and lower cost of education. Targeted Completion Date: June 2013

2. **Develop a statewide assessment to measure and certify core competency skills of Missouri’s graduating high school seniors. Assessment would be informed by college- and career-readiness criteria. Actions:**

- a. Completed:



- 7/28/11: A meeting of high level representatives from DED, DESE and MDHE was held to identify the makeup of the College- and Career-Ready Standard Setting Committee, who will set a composite College- and Career-Readiness cut scoring using the existing End-of-Course exams.
- In early 2012, Missouri was one of four states selected by ACT to participate in a new national initiative -- Certified Work Ready Communities (CWRC). With support from the Governor, Missouri assembled a state CWRC team led by top officials from business, education and government. By leveraging the National Career Readiness Certificate (NCRC) and using it to educate and engage stakeholders on the value of the NCRC and community certification, Missouri's team was able to successfully launch its CWRC initiative September 4th at the Governor's Economic Development Conference. The CWRC initiative has led to a significant increase in NCRC attainment, which is a key action item in the SIEG Workforce strategy. In addition, business support and recognition of the NCRC is increasing as a result of CWRC.

b. Planned:

- Empanel a Standard Setting Committee consisting of key leaders from across academia and the private sector. Targeted Completion Date: TBD.
- Conduct outreach to local education providers, elected officials, business people and parents to inform them of the rationale behind, process for, and expectations of the College and Career Readiness Standards. Targeted Completion Date: May 1, 2013.
- Conduct a standard setting process using the current End-of-Course exams to establish a composite cut score reflecting the skills higher education officials and employers deem necessary for success in both the work and college environments with the possible transition in the future to one of the assessment consortium end of study assessments using the consortium definition of College and Career Readiness. Targeted Completion Date: January 2013.
- Develop and launch capstone standardized skills-assessment examinations to gauge students' aptitude in the skills higher education officials and employers deem necessary for success in both environments. (Note: Report high school student progress toward College-and Career-Ready standard score.) Targeted Completion Date: TBD.

3. **Partner with the state's colleges and universities to ensure students remain in Missouri after graduation.**

**Actions:**

a. Completed:

- 7/28/11: A meeting of high level representatives from DED, DESE and MDHE was held to identify action items for this tactic and name a working group and group lead.
- 9/1/12: Feature all current professional job placement openings and internships on a single, easy-to-use website. With the acquisition of [Burning Glass](#) technology, [www.jobs.mo.gov](http://www.jobs.mo.gov) now captures and consolidates all internet posted jobs from thousands of sources onto one website

b. Ongoing:

- Identify and promote current programs to link college and university students and graduates with opportunities in local businesses.
- Identify and promote local business opportunities to engage business.
- Brand and aggressively market program(s) and tool(s) to students at all levels (including high schools and vocational, career and technical schools).
- Enhance the program by adding components such as a social media engagement campaign and celebrity ambassadors.

c. Proposed:

- Consider tax credits and other incentives for both students and employers hiring the students. Targeted Completion Date: July 1, 2013.

4. **Develop optimized and coordinated cluster-based career-training pipelines, protocols and assessments.**

**Actions:**

a. Completed:

- 7/1/12: Consolidated current training database, career-pipeline program inventory, and existing MECH website to create an online tool corresponding to the newly branded [www.jobs.mo.gov](http://www.jobs.mo.gov) web portal.

b. Planned:

- Update Competency Models for target industries identified in the *Strategic initiative for Economic Growth* to be vetted by industry councils and training providers. MERIC is using the new Burning Glass tool to analyze top job and skill demands by target industry as the next logical step in advancing the results from earlier competency models given ability of this product to gauge current employer needs. Targeted Completion Date: July 1, 2013.
- Customize the Missouri Connections portal to reflect the state's growing job clusters and targeted industry sectors. DESE is ready to make any revisions needed and the partnership group is working on this, with assistance from MERIC. Targeted Completion Date: January 31, 2013.
- Introduce, define and provide recommendations for implementing stackable credentials based on competencies to workforce and education partners, the Governor's Office and the Department of Higher Education. Additionally, Missouri's community colleges, through the MO Health Wins and MO Manufacturing Wins grants, have identified strategies to implement stackable credentials into their programs. Targeted Completion Date: December 31, 2013.
- Establish partnership between state officials and local and regional training providers to align degree and non-degree, apprenticeship, certification, and credential training with

curricula to align with the Competency Model assessments based on employer needs. The partnership should also include collaboration building on “Programs of Study” established by DESE to ensure further alignment for competencies. Targeted Completion Date: December 31, 2013.

5. Provide a streamlined workforce training incentive for expansion and relocation prospects coordinated through Missouri’s community college network. **Actions:**

a. Planned:

- Continue the process begun in the 2011 Missouri legislative session of securing consensus and approval for modifying existing programs or initiating new programs to streamline industry training programs to reflect “best practices” of other recognized states and recommendations from participating companies and site selection consultants (“Missouri Works Training” legislation). Targeted Completion Date: May 2013.
- Brand optimized industry training programs and incorporate as a critical piece of the state’s internal and external marketing initiatives. Targeted Completion Date: TBD
- Develop training consortium for each targeted industry sector as identified in the *Strategic Initiative for Economic Growth* (SIEG) report. Targeted Completion Date: July 1, 2013.

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## **INDUSTRY COUNCILS**

### **2012 ANNUAL REPORT**

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## ADVANCED MANUFACTURING

### INDUSTRY COUNCIL

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#### **Overview:**

Advanced manufacturing companies are creative, technology-driven companies with operations that create advanced products, use innovative technologies in those processes and/or are inventing new products, processes and technologies for the future of manufacturing. According to MERIC, Missouri has over 8,000 manufacturing companies and employed 243,140 workers in 2010. Manufacturing accounted for \$30.9 billion or 12.7% of the state's \$244 billion overall Gross Domestic Product (GDP). Manufacturing also produces nearly 93% of the state's exports. In Missouri, the average annual manufacturing wage is \$45,953 as compared to the average annual state wage in general of \$37,125. Approximately 50% of Missouri manufacturers are Advanced Manufacturing companies.

#### **Challenges:**

The majority of manufacturers recognize the importance of focusing on awareness, best practices, and achievement related to six key manufacturing strategies: (1) Customer-Focused Innovation; (2) Systemic Continuous Improvement; (3) Advanced Talent Management; (4) Global Engagement; (5) Extended Enterprise Management; and (6) Sustainable Product and Process Development. However, there are significant gaps between recognizing the importance and achieving those key categories. As an example, many manufacturers lack key success factors such as company-specific strategies, talented workers, effective business systems and up-to-date equipment. Additionally, many have no strategy for global engagement, sustainability or human-capital management.

Other important challenges for small manufacturers include:

- Smaller manufacturers tend to have fewer internal resources than larger manufacturers (defined as having more than \$100 million in revenues) to compete globally..
- Leadership changes within the next five years could have an adverse affect on manufacturing. Due to the aging population, a large number of manufacturing firms anticipate possible leadership changes.
- Manufacturers need access to support services regarding regulatory/compliance issues, operational improvements, workforce development, strategic planning, innovation/R&D, and business development.
- Sustainability regarding energy and the environment is becoming more critical to manufacturers as their customers are demanding social responsibility.

#### **Recommendations:**

1. Creating low cost regional industry clusters, specifically targeting concentrations of interconnected manufacturers (e.g. the state's automotive sector) could ignite innovation, entrepreneurship, and increase exporting activity, ultimately leading to more jobs from the expansion of existing businesses or new business startups.

2. The council is also in alignment with the recommendations outlined under the three pillars referenced in the [report](#) to the President on “Capturing Domestic Competitive Advantage in Advanced Manufacturing”, released in July 2012. The three pillars supported recommendations on:

**a. Enabling Innovation:**

- Establish a National Advanced Manufacturing Strategy: The AMP Steering Committee proposes establishing and maintaining a national advanced manufacturing strategy by putting in place a systematic process to identify and prioritize critical cross-cutting technologies.
- Increase R&D Funding in Top Cross-Cutting Technologies: In addition to identifying a “starter list” of cross-cutting technologies that are vital to advanced manufacturing, the AMP Steering Committee proposes a process for evaluating technologies for research and development (R&D) funding.
- Establish a National Network of Manufacturing Innovation Institutes (MIIs): The AMP Steering Committee proposes the formation of MIIs as public-private partnerships to foster regional ecosystems in advanced manufacturing technologies. MIIs are one vehicle to integrate many of the Committee’s recommendations.
- Empower Enhanced Industry/University Collaboration in Advanced Manufacturing Research: The AMP Steering Committee recommends a change in the treatment of tax-free bond-funded facilities at universities that will enable greater and stronger interactions between universities and industry.
- Foster a More Robust Environment for Commercialization of Advanced Manufacturing Technologies: The AMP Steering Committee recommends that action is taken to connect manufacturers to university innovation ecosystems and create a continuum of capital access from start up to scale up.
- Establish a National Advanced Manufacturing Portal: The AMP Steering Committee recommends that a searchable database of manufacturing resources is created as a key mechanism to support access by small and medium-sized enterprises to enabling infrastructure.

**b. Securing the Talent Pipeline:**

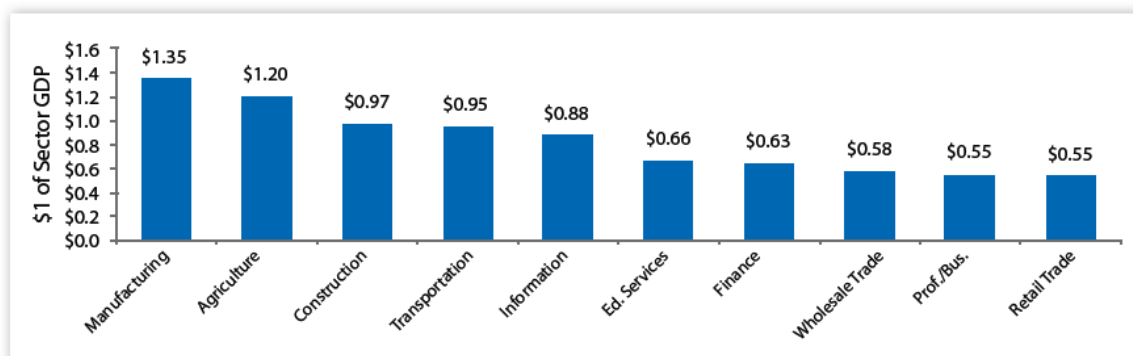
- Correct Public Misconceptions About Manufacturing: Building excitement and interest in careers in manufacturing is a critical national need, and an advertising campaign is recommended by the AMP Steering Committee as one important step in this direction.
- Tap the Talent Pool of Returning Veterans: Returning veterans possess many of the key skills needed to fill the skills gap in the manufacturing talent pipeline. The AMP Steering Committee makes specific recommendations on how to connect these veterans with manufacturing employment opportunities.
- Invest in Community College Level Education: The community college level of education is the “sweet spot” for reducing the skills gap in manufacturing. Increased investment in this sector is recommended, following the best practices of leading innovators.

- Develop Partnerships to Provide Skills Certifications and Accreditation: Portability and modularity of the credentialing process in advanced manufacturing is critical to allow coordinated action of organizations that feed the talent pipeline. The AMP Steering Committee supports the establishment of stackable credentials.
- Enhance Advanced Manufacturing University Programs: The AMP Steering Committee recommends that universities bring new focus to advanced manufacturing through the development of educational modules and courses.
- Launch National Manufacturing Fellowships & Internships: The AMP Steering Committee supports the creation of national fellowships and internships in advanced manufacturing in order to bring needed resources but more importantly national recognition to manufacturing career opportunities.

**c. Improving the business climate.**

- Enact Tax Reform: The AMP Steering Committee recommends a set of specific tax reforms that can “level the playing field” for domestic manufacturers.
- Streamline Regulatory Policy: The AMP Steering Committee recommends a framework for smarter regulations relating to advanced manufacturing.
- Improve Trade Policy: Trade policies can have an adverse impact on advanced manufacturing firms in the United States. The AMP Steering Committee recommends specific actions that can be taken to improve trade policy.
- Update Energy Policy: The manufacturing sector is a large consumer of energy, and consequently, domestic energy policies can have a profound impact on global competitiveness. The AMP Steering Committee makes specific policy recommendations regarding energy issues of importance in manufacturing.

**Economic Activity Generated by \$1 of Sector Output, 2010**



Source: AMP Steering Committee based on data from Bureau of Economic Analysis, Input-Output Tables available at [www.bea.gov/iTable/index\\_industry.cfm](http://www.bea.gov/iTable/index_industry.cfm).

## Employment and Establishment Data:

The Advanced Manufacturing Industry is comprised of two niches: Aerospace and Defense and Transportation Equipment. Advanced Manufacturing refers to those producers that are technology-intensive and the industries that support them. Some of the leading Advanced Manufacturing occupations include Computer Systems Design and Related Services, with employment of 25,093 in Missouri, and Architectural, Engineering and Related Services with employment of 19,080 in Missouri.

**2011 Employment and Establishment Data for the Advanced Manufacturing Target Industry**

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
3169	Other Leather and Allied Product Manufacturing	20	Suppressed	Suppressed	Suppressed
3259	Other Chemical Product and Preparation Mfg	64	1,540	\$52,615	0.91
3261	Plastics Product Manufacturing	232	11,426	\$42,785	1.13
3262	Rubber Product Manufacturing	51	3,298	\$44,072	1.30
3313	Alumina and Aluminum Production and Processing	11	1,721	\$59,625	1.51
3314	Nonferrous Metal (except Aluminum) Production and Processing	18	1,416	\$60,765	1.16
3315	Foundries	38	2,491	\$45,852	1.02
3323	Architectural and Structural Metals Manufacturing	271	6,501	\$45,855	0.99
3324	Boiler, Tank, and Shipping Container Manufacturing	48	2,284	\$47,499	1.29
3329	Other Fabricated Metal Product Manufacturing	126	9,783	\$60,271	1.93
3333	Commercial and Service Industry Machinery Mfg	53	2,680	\$52,129	1.46
3334	Ventilation, Heating, Air-Conditioning, and Commercial	67	9,839	\$40,889	3.73
3335	Metalworking Machinery Manufacturing	198	4,760	\$49,417	1.43
3336	Engine, Turbine, Power Transmission Equipment Mfg	28	2,963	\$43,584	1.50
3339	Other General Purpose Machinery Manufacturing	113	3,698	\$54,040	0.77
3341	Computer and Peripheral Equipment Manufacturing	11	75	\$58,777	0.02
3344	Semiconductor and Other Electronic Component Mfg	47	3,285	\$58,309	0.43
3345	Navigational, Measuring, Electromedical, and Control Instruments	57	1,250	\$51,959	0.15
3353	Electrical Equipment Manufacturing	65	4,740	\$52,009	1.71
3359	Other Electrical Equipment and Component Mfg	57	5,563	\$43,749	2.23
3361	Motor Vehicle Manufacturing	11	Suppressed	Suppressed	Suppressed
3362	Motor Vehicle Body and Trailer Manufacturing	80	3,772	\$39,931	1.63
3363	Motor Vehicle Parts Manufacturing	149	7,923	\$43,258	0.89
3364	Aerospace Product and Parts Manufacturing	47	14,490	\$97,100	1.49
3369	Other Transportation Equipment Manufacturing	23	961	\$66,156	1.45
5413	Architectural, Engineering, and Related Services	1,931	19,830	\$73,778	0.77
5414	Specialized Design Services	458	1,536	\$52,447	0.67
5415	Computer Systems Design and Related Services	3,081	25,093	\$81,182	0.82
5417	Scientific Research and Development Services	320	10,018	\$88,685	0.79

Source: 2011 Quarterly Census of Employment and Wages, BLS



## Occupations:

The Advanced Manufacturing Industry's top long-term training occupations include Industrial Engineers, Mechanical Engineers and Accountants and Auditors. Leading moderate training occupations are First Line Supervisors, General and Operation Managers and Industrial Engineering Technicians. Short term training occupations include Team Assemblers, Packaging and Filing Machine Operators and Inspectors, Sorters, Samplers and Weighers.

### 2011 Top Advanced Manufacturing Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
<b>Long Term Training</b>				
17-2112	Industrial Engineers	2,270	\$79,150	0.89
17-2141	Mechanical Engineers	2,107	\$78,860	0.79
13-2011	Accountants and Auditors	1,408	\$61,850	1.16
11-3051	Industrial Production Managers	1,384	\$85,970	0.96
15-1132	Software Developers, Applications	1,311	\$83,350	1.12
<b>Moderate Training</b>				
51-1011	First-Line Supervisors of Production and Operating Workers	5,689	\$51,900	1.03
11-1021	General and Operations Managers	2,952	\$89,590	1.21
17-3026	Industrial Engineering Technicians	858	\$55,960	0.90
11-9021	Construction Managers	839	\$82,040	0.88
49-3011	Aircraft Mechanics and Service Technicians	665	\$54,850	0.92
<b>Short Term Training</b>				
51-2092	Team Assemblers	14,247	\$30,070	1.41
51-9111	Packaging and Filling Machine Operators and Tenders	5,831	\$29,000	1.41
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	4,460	\$37,690	0.94
51-4121	Welders, Cutters, Solderers, and Brazers	4,256	\$34,560	1.32
49-9071	Maintenance and Repair Workers, General	4,204	\$34,420	1.08

Sources: 2011 Occupational Employment Survey, BLS

## Advanced Manufacturing Industry Labor Analysis

MERIC performed the following labor analysis of the Advanced Manufacturing Industry over the past six months by analyzing job postings in the industry.

There were a total of 1,903 job postings in the Advanced Manufacturing Industry during the previous 6 month period. The top occupation was Mechanical Engineers with 102 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Over half (53%) of the jobs posted for this industry and time period fell into the “Later” category, indicating the demand for technical and skilled labor in Advanced Manufacturing.

Top Employers included Boeing, Emerson Electric, BAE Systems, Northrop Grumman, and LMI Aerospace.

Top Job Postings		
SOC Code	Occupation	Job Openings
<b>Now Occupations</b>		
43-4051	Customer Service Representatives	41
49-9071	Maintenance And Repair Workers, General	25
43-5061	Production, Planning, And Expediting Clerks	22
49-9099	Installation, Maintenance, And Repair Workers	22
33-9032	Security Guards	18
51-9199	Production Workers, All Other	17
51-4199	Metal Workers And Plastic Workers	15
43-6014	Secretaries And Administrative Assistants	14
51-9061	Inspectors, Testers, Sorters, Samplers, And Weighers	13
51-2099	Assemblers And Fabricators	13
<b>Next Occupations</b>		
41-4012	Sales Representatives, Wholesale And Manufacturing	65
51-1011	First-Line Supervisors Of Production And Operating Workers	35
49-9021	Heating And Air Conditioning Mechanics And Installers	25
11-3051	Industrial Production Managers	25
11-9199	Managers, All Other	25
13-1023	Purchasing Agents	24
15-1152	Computer Network Support Specialists	15
43-6011	Executive Secretaries And Executive Administrative Assistants	15
11-3051	Quality Control Systems Managers	15
49-1011	First-Line Supervisors Of Mechanics, Installers, And Repairers	14
<b>Later Occupations</b>		
17-2141	Mechanical Engineers	102
15-1132	Software Developers, Applications	94
15-1121	Computer Systems Analysts	49
15-1133	Software Developers, Systems Software	48
17-2112	Industrial Engineers	46
15-1142	Network And Computer Systems Administrators	44
15-1131	Computer Programmers	37
13-2011	Accountants	33
17-2041	Chemical Engineers	32
17-2071	Electrical Engineers	32

Top 10 Base Skills	
Description	Job Openings
Communication Skills	751
Organizational Skills	595
Training	592
Writing	414
Leadership	389
Planning	363
Microsoft Office	362
Problem Solving	353
Microsoft Excel	348
Project Management	310

The accompanying charts depict the skills called for in job postings within Advanced Manufacturing. Job postings indicated demand for base skills as well as specialized skills such as repair, chemistry or math. Several computer technician and programming occupations, such as software developers and computer systems analysts, were among the top occupations posted. Likewise, several computer and network certifications were on the top ten requested certificates, which included Security+ and Network+.

Top 10 Specialized Skills	
Description	Job Openings
Repair	200
Chemistry	194
Mathematics	188
Inspection	160
Structured Methods	156
Physics	154
Sales	145
Scheduling	139
Purchasing	123
Accounting	120

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## BIOSCIENCE

### INDUSTRY COUNCIL

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1. **Issue/Challenge #1:** Lack of a talented work force-in some areas within the industry.

a. **Recommendations:**

- Invest in K-12 STEM and higher education. The current funding environment for these programs is likely to decrease the pool of skilled workers, rather than increase it.
- Fund technical training programs benefiting the bioscience industry at Missouri's community colleges. Incorporate experiential learning such as internships.
- Develop funding programs to support smaller companies and emerging entrepreneurs. Larger companies tend to have internal training programs, but small companies need assistance in this area. Examples of such programs include:
  - Assistance with preparation of commercial grant applications;
  - Programs to teach and mentor emerging entrepreneurs such as the BioEntrepreneur Development Program run by the Center for Emerging Technologies in St. Louis;
  - More advanced training programs targeting small companies in the bioscience industry;
  - An educational loan forgiveness program designed to incentivize residents to return to work in the state.

Support for training programs in Missouri is complicated by the fact that many of our large metropolitan areas (St. Louis, KC, and Joplin) border other states. Currently, Missouri's training programs cannot be used for employees who work in Missouri if they reside in an adjacent state, which impacts a portion of Missouri company employees in border regions. Bordering states such as Kansas do not have the same restrictions. The Council recommends that Missouri work with bordering states to harmonize training programs for existing companies that are already committed to operating in Missouri state (Note: this recommendation may not apply when recruiting companies from out-of-state).

2. **Issue/Challenge #2:** There is currently no "one stop-shop" specific to the bioscience industry outlining resources available.

3. **Issue/Challenge #3:** There is currently a need for a bioscience economic development point person to spearhead the bioscience initiative in Missouri.

4. **Issue/Challenge #4:** Application processes needs to be streamlined and user friendly.

There are many local, regional, state and federal resources available to the bioscience community and it can be difficult and time consuming for bioscience firms to navigate. Having a centralized point of contact and information center would streamline the process for many firms. An industry representative would provide comprehensive business advisory services tailored to the specific business needs of each firm and could make the application process more efficient and user friendly.

**a. Recommendation:**

- Continue to make economic development a high priority for Missouri.
- Support and commit funding for a highly visible leadership position within the Missouri Technology Corporation. Develop a job description consistent with desired role and responsibilities.
- Provide funding for a bioscience industry point person who would advise companies looking for details on different incentive programs. The Department of Economic Development previously supported an individual who dedicated time to this role, and feedback from companies was very positive. The absence of a dedicated position has been noted by many companies and by organizations that provide support to bioscience companies. Develop a job description consistent with desired outcomes for existing Missouri companies and those considering relocation to Missouri.

**5. Issue/Challenge #5: Lack of investment capital funding.**

Missouri ranks low nationally in terms of availability of investment of capital at all stages in the continuum of company growth: beginning with very early stage risk capital, through early venturing financing, and through later stage venture and private equity financing. In the last decade, the availability of capital in Missouri has continued to decline. These gaps make it extremely challenging for early-stage startups to initiate operations in Missouri. Companies who initiate operations here sometimes move out-of-state later in order to secure additional investment capital.

**a. Recommendation:**

- Expand the IDEA Fund program. The program is very small in terms of overall funding, but has made significant impacts in funding early-stage bioscience startups. An important feature of the IDEA program is support of companies as they transition through the earliest, most risky phases of growth where risk capital is extremely scarce: pre-seed, seed, and initial venture rounds. The assurance that a continuum of funding will be available as companies grow is critically needed to incentivize entrepreneurs to build companies in Missouri. The current IDEA Fund program funds pre-seed and seed stage companies, and provide some matching funds for venture capital investments, but the pool for venture capital match is very limited. Specifically, expand 1) total funding and 2) the proportion going to venture capital matching dollars. In the absence of this continuum of funding, companies risk running out of funding after initial development and going out of business or leaving the state to secure additional capital.
- Continue the current MTC model that relies to a large extent on other investors to provide due diligence and co-investment, as it would be much more expensive to build (often duplicative)

diligence capacity. Ensure that MTC tracks their investments with measures of progress in developing technology and leverage of matching funds.

- Address the large deficit in capital needed to support later stage company growth and development. Provide regional sources of funds that can be utilized to (partially) match external investment dollars.

**6. Issue/Challenge #6:** Competitiveness of existing incentive programs for the bioscience sector.

States across the nation continue to make investments designed to encourage the growth of the bioscience sector despite challenging state fiscal conditions.

The Kansas Bioscience Authority (KBA) was created in 2004 and is funded by a percentage of the increases in state taxes paid by bioscience companies. Maryland continues to implement its BIO 2020 Initiative, a commitment to invest \$1.1 billion to support the state's life science industry. Massachusetts' Life Science Initiative fully funded \$25 million in tax credits for life science companies and provided \$15 million for its Life Science Investment Fund, which makes investment to stimulate bioscience R&D. Ohio's Third Frontier Initiative, a \$1.6 billion, 10-year initiative launched in 2002 aimed at growing the state's technology industry sectors, including the biosciences.

**b. Recommendation:**

- Passage of the Missouri Science and Innovation Reinvestment Act (MOSIRA) and ongoing, meaningful financial support of MTC is critical to provide funding for these recommendations. If a measure cannot pass at the state level, local measures designed to provide regional funding sources should be considered. However, such regional measures are less desirable than statewide support such as that provided in regions now seen as leaders in building bioscience clusters (Ohio, Massachusetts, Maryland, etc.).
- Consider other measures such as creation of tax incentives that waive Missouri taxation on gains from sales/investment returns of startup companies. This should be coupled to policies/restrictions that strongly incentivize companies to remain in Missouri as a condition for receiving tax incentives (i.e. avoid front-loading incentives). Missouri's incentive programs are not competitive on a national or even regional basis in that approximately 60% of the states have R&D tax credit programs.
- It is not clear that incentive programs that spend large sums of money to recruit large companies from other states are cost-effective. Could the state be more effective by targeting companies earlier in their growth: small- to mid-sized companies?

**7. Issue/Challenge #7:** Solicit feedback on why companies do not decide to locate in Missouri.

**a. Recommendation:** Consider either of the following:

- Conduct exit surveys with Missouri bioscience firms that decide to leave the state - this represents an opportunity to collect valuable data that would, in turn, assist future recruitment and retention efforts. Identify a lead organization to drive this process; and/or

- Solicit feedback from firms that consider moving to Missouri, but ultimately decide to locate elsewhere. The latter survey could be done by organizations such as the Missouri Partnership, which could gather feedback and anonymize the information before disseminating. Use of anonymous data would reassure companies that might otherwise be reluctant to supply detailed feedback.

Bioscience firms can provide valuable information for analysis. These surveys would provide the state with an understanding of what drives bioscience firms in selection process, and in turn lead to recommendations to improve processes over time.

### Employment and Establishment Data:

The Biosciences Target Industry encompasses three niches: Plant and Agricultural Technology, Companion and Feed Animal Sciences, and Biomedical. Missouri has a robust network of public and private entities supporting research and economic growth within this targeted industry.

Missouri is home to a Bioscience Industry that employs 50,567 workers. Leading the Bioscience Industry is Professional, Scientific and Technical Services employing 10,708 in Missouri and Scientific and Research and Development Services following with an employment of 10,018 in Missouri.

Location quotient compares the regional share of economic activity in a particular industry to the national share of economic activity in the same industry. Missouri's overall Bioscience Industry location quotient (LQ) compared to the nation is 1.60. Some of Missouri's leading Bioscience Industries are Animal Food Manufacturing with an LQ of 3.58 and Pesticides, Fertilizer and Agriculture Chemical Manufacturing with a LQ of 2.33.

### 2011 Employment and Establishment Data for the Bioscience Target Industry

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
1111	Oilseed and Grain Farming	419	1,966	\$30,454	2.18
1122	Hog and Pig Farming	70	1,724	\$29,647	2.99
1152	Support Activities for Animal Production	82	566	\$27,527	1.07
3111	Animal Food Manufacturing	80	3,713	\$72,249	3.58
3112	Grain and Oilseed Milling	42	2,135	\$43,754	1.81
3251	Basic Chemical Manufacturing	49	3,164	\$76,253	1.11
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Mfg	46	1,676	\$64,905	2.33
3254	Pharmaceutical and Medicine Manufacturing	67	4,637	\$77,330	0.86
3391	Medical Equipment and Supplies Manufacturing	230	4,004	\$48,896	0.66
4245	Farm Product Raw Material Merchant Wholesalers	187	2,400	\$50,832	1.63
5417	Scientific Research and Development Services	320	10,018	\$88,685	0.79
5419	Other Professional, Scientific, and Technical Services	1,555	10,708	\$34,753	0.91
6215	Medical and Diagnostic Laboratories	297	3,856	\$51,254	0.83
	<b>Total Bio Science Industries</b>	<b>3,444</b>	<b>50,567</b>	<b>\$52,847</b>	<b>1.60</b>

Source: 2011 Quarterly Census of Employment and Wages, BLS

## Bioscience Occupations

Top long-term training occupations in Missouri include Chemists and Veterinarians, while the top moderate-term training Occupations include Veterinary Technologists and General Operations Managers. Leading short-term training occupations include Veterinary Assistants and Laboratory Animal Caretakers and Farm workers and Crop, Nursery and Greenhouse Laborers.

### 2011 Biosciences Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
<b>Long Term Training</b>				
19-2031	Chemists	1,112	\$63,340	1.30
29-1131	Veterinarians	924	\$75,720	0.86
15-1799	Computer Occupations, All Other	922	\$77,930	0.76
13-2011	Accountants and Auditors	607	\$61,850	1.16
19-1021	Biochemists and Biophysicists	429	\$64,440	1.19
<b>Moderate Training</b>				
29-2056	Veterinary Technologists and Technicians	1,086	\$31,990	0.91
11-1021	General and Operations Managers	796	\$89,590	1.21
29-2037	Radiologic Technologists and Technicians	750	\$49,580	1.25
51-1011	First-Line Supervisors of Production and Operating Workers	673	\$51,900	1.03
29-2012	Medical and Clinical Laboratory Technicians	414	\$35,310	1.01
<b>Short Term Training</b>				
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	1,872	\$20,170	1.18
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1,539	\$22,690	0.17
51-9111	Packaging and Filling Machine Operators and Tenders	1,268	\$29,000	1.41
43-9061	Office Clerks, General	1,264	\$29,300	1.14
43-4051	Customer Service Representatives	994	\$30,800	1.04



## Biosciences Industry Labor Analysis

MERIC performed the following labor analysis of the Bioscience Industry over the past six months by analyzing job postings in the industry. There were a total 2,986 job postings in the Biosciences Industry during the previous six months. The top occupation was Chemists with 186 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Almost one-half (46%) of jobs posted for this industry and time period fell into the “Later” category, indicating the demand for technical and skilled labor in the industry. Sales representatives, both Wholesale and Technical, made up one-fourth of the job postings in the Next category.

Top Job Postings		
SOC Code	Description	Job Openings
<b>Now Occupations</b>		
31-9097	Phlebotomists	54
53-7062	Laborers And Freight, Stock, And Material Movers, Hand	39
43-4051	Customer Service Representatives	34
49-9071	Maintenance And Repair Workers, General	34
51-9061	Inspectors, Testers, Sorters, Samplers, And Weighers	26
43-3031	Bookkeeping, Accounting, And Auditing Clerks	22
43-6014	Secretaries And Administrative Assistants	20
43-5061	Production, Planning, And Expediting Clerks	17
51-9199	Production Workers, All Other	17
49-9099	Installation, Maintenance, And Repair Workers	16
<b>Next Occupations</b>		
41-4012	Sales Representatives, Wholesale And Manufacturing	120
29-2012	Medical And Clinical Laboratory Technicians	102
41-4011	Sales Representatives, Tech. and Sci. Products	95
11-9199	Managers, Other	48
51-1011	First-Line Supervisors Of Production And Operating Workers	42
29-2099	Health Technologists And Technicians	41
15-1151	Computer User Support Specialists	30
29-1141	Registered Nurses	26
19-4099	Quality Control Analysts	26
19-4011	Food Science Technicians	20
<b>Later Occupations</b>		
19-2031	Chemists	186
17-2141	Mechanical Engineers	56
11-1021	General And Operations Managers	47
15-1121	Computer Systems Analysts	46
15-1132	Software Developers, Applications	45
29-1199	Health Diagnosing And Treating Practitioners	40
11-2022	Sales Managers	39
11-2021	Marketing Managers	39
19-1042	Medical Scientists, Except Epidemiologists	35
29-2011	Medical And Clinical Laboratory Technologists	34



Top 10 Basic Skills	
Description	Job Openings
Training	1,143
Communication Skills	1,101
Organizational Skills	877
Writing	711
Research	661
Leadership	517
Microsoft Excel	502
Problem Solving	466
Quality Assurance And Control	456
Planning	430

Top 10 Specialized Skills	
Description	Job Openings
Chemistry	438
Sales	336
Validation	292
Packaging	188
Repair	177
Good Manufacturing Practices (GMP)	177
Biology	168
Business Planning	166
High Performance Liquid Chromotography	158
Good Laboratory Practices (GLP)	157

The above charts depict the skills called for in job postings within Bioscience. Job posting indicated a demand for base skills as well as specialized skills.

The top in-demand occupation was Chemists, and Chemistry was the top Specialized Skill, found in 438 job postings.

Top 10 Certificates	
Certificate	Job Openings
Security+	40
Phlebotomy Certification	28
Network+ Certified	23
Certified Diabetes Educator	22
Project Management Certification (e.g. PMP)	19
Professional Engineer	17
Registered Nurse	16
Six Sigma Black Belt	15
Certified Information Systems Security Professional (CISSP)	14
Commercial Driver's License	13

The top certificates requested included Security+ and Phlebotomy. Phlebotomist was also the top “Now” occupation for the time period.

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## ENERGY SOLUTIONS

### INDUSTRY COUNCIL

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#### 1. Combined Heat and Power - Recommendation:

- a. Convene regional stakeholders to identify, develop, and encourage the adoption of investment models and state best practice policies for combined heat and power (CHP) applications. In conjunction with the U.S. Department of Energy, the Missouri Public Service Commission, Missouri Department of Natural Resources and the Missouri Department of Economic Development, host a public workshop to explore CHP.

#### 2. Energy Efficiency - Recommendations:

- a. **Accelerate Utility-Based Energy Efficiency Programs:** Continue to implement and accelerate all aspects of the 2009 Missouri Energy Efficiency Investment Act (MEEIA), including the Commission's requirement to:
  - o Provide timely cost recovery for utilities;
  - o Ensure that utility financial incentives are aligned with helping customers use energy more efficiently and in a manner that sustains or enhances utility customers' incentives to use energy more efficiently; and,
  - o Provide timely earnings opportunities associated with cost effective measurable and verifiable efficiency savings.
- b. **Economic Analysis and Strategy Development for Energy Efficiency in Missouri.** Commission the Department of Economic Development in consultation with the Department of Natural Resources to conduct an evaluative study, informed by recent reports such as ACEEE's, of economic opportunities for Missouri associated with existing and potential energy efficiency policies and initiatives. This analysis will result in specific recommendations for energy efficiency strategies in the State of Missouri that effectively lowers energy costs and creates new jobs.

#### 3. Aging Infrastructure - Recommendation:

- a. Implement policies that would provide greater certainty of cost recovery in support of stronger credit ratings for Missouri's regulated electric service providers in support of greater access to the low-cost capital needed to invest in upgrading, maintaining and replacing our aging generation, transmission and distribution infrastructure and to provide for greater investments in 'smart grid' equipment, energy efficiency and renewable energy resources. These policies should be focused on encouraging investments in infrastructure that will assure continued access to safe, reliable, affordable and environmentally responsible energy and assuring that electric service providers continue to be audited and be subject to prudence reviews on these investments by the Missouri Public Service Commission.

#### 4. Nuclear - Recommendation:

- a. Continue to support the Westinghouse SMR application to DOE for investment funds for the design certification and licensing of this technology. If we are successful at winning a portion of the DOE investment fund, push forward with mobilizing Missouri's economic development

organizations to attract manufacturers of SMR components to our state and further assessments of possibly building an SMR at the Callaway Energy Center.

**5. Wind - Recommendations:**

- a. Missouri should identify policies to make Missouri more competitive and attractive to wind supply chain manufacturers while considering local and state policies.
- b. Missouri government should increase its support to our Missouri-based energy storage companies and higher education institutions providing research and development support to the energy storage (such as cost sharing and leveraging of federal funds), as well as encouraging a greater number of students to participate in development and research of the energy storage industry, so they will be better prepared to enter this new work force.

**6. Natural Gas and Energy Efficiency - Recommendation**

- a. Missouri energy policies and regulations should promote any and all supply-side and demand-side technologies that are based on a full fuel cycle analysis (as defined and recommended by the National Academy of Sciences), can efficiently and economically meet the energy needs of end users, and meets least-cost planning objectives of its energy utilities.

**7. Coal Subcommittee - Recommendation**

- a. That the appropriate unit within the Department of Economic Development and Department of Natural Resources establish, maintain and promote a database of potential Combined Heat and Power (CHP) partners.

**8. Natural Gas - Recommendation**

- a. Request the State of Missouri to participate in a multi-state proposal by executing a Memorandum of Understanding (MOU) that describes a coordinated effort between 13 states (and growing) to encourage automobile manufacturers in the U.S. to develop a functional and affordable original equipment manufacturer (OEM) fleet natural gas vehicle (NGV) that will also meet public demand.

**9. Solar policy - Recommendation**

- a. Improve net metering so owners of electrical generating systems are given full retail credit for excess energy generated throughout a 12-month cycle, rather than losing the ability to get full retail credit at the end of the month. Also, expand the net metering size cap for electrical generating systems from 100kW to 250 kW, which is comparable to laws in more than half the country.

**10. Biomass/Bioenergy - Recommendations**

- a. State support should be directed toward economically and environmentally sustainable biomass industries using key metrics to quantify verifiable minimum positive energy conversion efficiencies. Focus on at most three select technologies that have the highest likelihood of success and the greatest benefits to society. State policies should consider:

- Difference between “Good” and “Bad” Biomass - support use of “eligible biomass woody fuels including crop residuals instead of whole trees”;and
  - Use the “best” science to further clarify what biomass qualifies for support under current state renewable energy standards including: 1) ensuring proper amount of biomass left in forest to replenish soil nutrients and support wildlife habitat, 2) using “full life cycle” analysis to assess full impact on emissions, 3) support systems with high thermal efficiency (i.e., greater than 50%), and 4) support use of biomass that provides greatest emissions reduction over 20 years.
- b. Commission a two part “data mining” study to summarize existing knowledge from studies already funded by MASBDA and DNR’s administration of ARRA and identify economically and environmentally “sustainable” biomass/bioenergy industries with the greatest probability of commercial development with a defendable potential payback period.

#### **11. Coal - Recommendation**

- a. The Department of Natural Resources Division of Geology and Land Survey should be authorized and funded to compile a more comprehensive geologic survey of the availability, quantity and quality of Missouri Coal for coal bed methane.

#### **12. Natural Gas - Recommendation**

- a. Reactivate the Missouri Alternative Fuels Commission, a group responsible for promoting the development, sale, distribution, and consumption of alternative fuels and the use of alternative fuel vehicles and technology. Provide specific direction to consider how natural gas can be utilized to reduce our dependency on foreign oil and provide increased energy security, both within the State and supporting efforts nationwide. This Commission should also be charged with determining the appropriate legislation or other approaches to promote these activities.

## Employment and Establishment Data:

The Energy Solutions Industry includes energy technologies that provide long-term, low-impact, high-value energy solutions for the State of Missouri's current and future residents and businesses. Demand for electricity is expected to grow 30 percent by 2030, making development of diverse alternate energy technologies critical for Missouri's future. The Energy Solutions Industry in Missouri employs 114,590 workers. Leading the Energy Solutions Industry in employment is Engineering and Related Services with 19,830 workers in Missouri, followed by Management, Scientific, and Technical Consulting Firms with an employment of 10,242 in Missouri.

### 2011 Employment and Establishment Data for the Energy Solutions Target Industry

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
3112	Grain and Oilseed Milling	42	2,135	\$43,754	1.81
3251	Basic Chemical Manufacturing	49	3,164	\$76,253	1.11
3252	Resin, Synthetic Rubber, & Artificial Synthetic Fibers & Filaments Mfg	14	915	\$62,772	0.51
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Mfg	46	1,676	\$64,905	2.33
3261	Plastics Product Manufacturing	232	11,426	\$42,785	1.13
3272	Glass and Glass Product Manufacturing	25	879	\$49,988	0.55
3315	Foundries	38	2,491	\$45,852	1.02
3323	Architectural and Structural Metals Manufacturing	271	6,501	\$45,855	0.99
3329	Other Fabricated Metal Product Manufacturing	126	9,783	\$60,271	1.93
3332	Industrial Machinery Manufacturing	62	1,372	\$52,858	0.67
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	67	9,839	\$40,889	3.73
3336	Engine, Turbine, and Power Transmission Equipment Mfg	28	2,963	\$43,584	1.50
3344	Semiconductor and Other Electronic Component Mfg	47	3,285	\$58,309	0.43
3345	Navigational, Measurement, Electromedical, Control Instruments Manufacturing	57	1,250	\$51,959	0.15
3353	Electrical Equipment Manufacturing	65	4,740	\$52,009	1.71
3359	Other Electrical Equipment and Component Manufacturing	57	5,563	\$43,749	2.23
4247	Petroleum and Petroleum Products Merchant Wholesalers	298	1,906	\$49,573	1.03
5413	Architectural, Engineering, and Related Services	1,931	19,830	\$73,778	0.77
5416	Management, Scientific, and Technical Consulting Services	2,105	10,242	\$69,452	0.48
5417	Scientific Research and Development Services	320	10,018	\$88,685	0.79
8112	Electronic and Precision Equipment Repair & Maintenance	334	1,622	\$48,694	0.83
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair & Maintenance	587	2,990	\$44,570	0.82
	<b>Total Energy Solutions Industries</b>	<b>6,801</b>	<b>114,590</b>	<b>\$1,210,544</b>	<b>1.21</b>

Source: 2011 Quarterly Census of Employment and Wages, BLS

## Occupations:

The Energy Solutions Industry top long-term training occupations include Mechanical and Civil Engineers and Architects. Leading moderate-training occupations are First Line Supervisors of Production and Operating Workers, General and Operation Managers, and Architectural and Civil Drafters. Short-term training occupations include Team Assemblers, General Office Clerks and Computer Controlled Machine Tool Operators of metal and plastic.

### 2011 Top Energy Solutions Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
<b>Long Term Training</b>				
17-2141	Mechanical Engineers	2,392	\$78,860	0.79
17-2051	Civil Engineers	2,246	\$75,190	0.82
17-1011	Architects, Except Landscape and Naval	1,702	\$70,860	1.33
13-2011	Accountants and Auditors	1,458	\$61,850	1.16
13-1111	Management Analysts	1,323	\$78,460	0.60
<b>Moderate Training</b>				
51-1011	First-Line Supervisors of Production and Operating Workers	2,614	\$51,900	1.03
11-1021	General and Operations Managers	1,922	\$89,590	1.21
17-3011	Architectural and Civil Drafters	1,520	\$43,750	0.79
17-3022	Civil Engineering Technicians	800	\$41,190	0.84
17-3023	Electrical and Electronics Engineering Technicians	696	\$56,240	0.64
<b>Short Term Training</b>				
51-2092	Team Assemblers	7,146	\$30,070	1.41
43-9061	Office Clerks, General	2,541	\$29,300	1.14
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	2,381	\$33,290	1.49
49-9071	Maintenance and Repair Workers, General	2,356	\$34,420	1.08
51-4072	Molding, Coremaking, and Casting Machine Setters,	2,340	\$35,860	1.39

Sources: 2011 Occupational Employment Survey, BLS

## Energy Solutions Industry Labor Analysis

MERIC performed the following labor analysis of the Energy Solutions Industry over the past six months.

There were a total of 4,741 job postings in the Energy Solutions Industry for the 6 month period. The top occupation was Computer Programmers with 188 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Top Job Postings		
SOC code	Occupation	Job Openings
<b>Now Occupations</b>		
43-4051	Customer Service Representatives	59
43-6014	Secretaries And Admin. Assistants	47
43-5061	Production, Planning, And Expediting Clerks	44
49-9099	Installation, Maintenance, And Repair Workers	35
49-9071	Maintenance And Repair Workers, General	34
51-9061	Inspectors, Testers, Sorters, Samplers, And Weighers	32
43-3031	Bookkeeping, Accounting, And Auditing Clerks	28
51-9199	Production Workers	25
43-3011	Bill And Account Collectors	18
41-9011	Demonstrators And Product Promoters	18
<b>Next Occupations</b>		
41-4012	Sales Reps, Wholesale / Mfg	163
11-9199	Managers, All Other	59
51-1011	First-Line Supervisors Of Production And Operating Workers	54
15-1151	Computer User Support Specialists	52
29-2012	Medical And Clinical Laboratory Technicians	44
11-3051	Industrial Production Managers	43
43-6011	Executive Secretaries And Executive Admin. Assistants	36
41-4011	Sales Reps, Tech. And Sci. Products	33
17-3013	Mechanical Drafters	30
41-1012	First-Line Supervisors Of Non-Retail Sales Workers	24
<b>Later Occupations</b>		
15-1131	Computer Programmers	188
17-2141	Mechanical Engineers	157
15-1199	Information Technology Project Managers	146
19-2031	Chemists	144
15-1132	Software Developers, Applications	112
15-1142	Network And Computer Systems Administrators	98
15-1121	Computer Systems Analysts	95
11-1021	General And Operations Managers	77
17-2051	Civil Engineers	75
17-2071	Electrical Engineers	72

The majority of job postings (57%) were found in the “Later” category, indicating that this is an industry that demands technical and skilled labor.

## Energy Solutions Industry Skills and Certificates

Top 10 Basis Skills	
Description	Job Openings
Communication Skills	1,587
Training	1,321
Writing	1,147
Organizational Skills	1,070
Problem Solving	883
Project Management	844
Research	785
Leadership	762
Microsoft Office	723
Planning	693

The accompanying charts depict the skills called for in job postings within Energy Solutions. Job postings indicated demand for base skills as well as specialized skills such as chemistry.

Top 10 Specialized Skills	
Description	Job Openings
Chemistry	328
Scheduling	301
Accounting	291
Sales	287
SQL	254
Business Development	251
Repair	235
Validation	233
Oracle	224
Inspection	202

Several computer technician and programming jobs, such as Computer Programmers and IT Project Managers, ranked in the top 10 occupations. Likewise, several computer and network certifications, such as Security+ and Network+, were in the top 10 certificates requested in Energy Solutions job postings.

Top 10 Certificates	
Description	Job Openings
Project Management Certification (e.g. PMP)	88
Security+	78
Professional Engineer	68
Six Sigma Certification	42
Network+ Certified	35
Professional Development	28
Cisco Certified Network Professional (CCNP)	19
Six Sigma Green Belt	18
Cisco Certified Network Associate	18
Six Sigma Black Belt	17



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## FINANCIAL AND PROFESSIONAL SERVICES

### INDUSTRY COUNCIL

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The members of the Finance and Professional Services Industry Council identified the following five issues as being of greatest concern for this industry cluster:

1. The need for talent retention and development.
2. Increased out-of-state promotion of Missouri.
3. The need for greater access to capital within the state.
4. The need for infrastructure improvements.
5. Federal regulatory burdens.

- **Financial Services:**

- Dodd-Frank: The primary challenge facing the financial services industry revolves around the uncertainty and increased costs created by the DoddFrank regulatory regime. While Dodd-Frank has implications across the entire sector, it is expected to have a particularly large impact on community banks. Increases in the cost of capital and compliance with expected rules from the Consumer Finance Protection Bureau are currently lowering profitability for community banks. Coupled with the low interest rate environment created by the Federal Reserve, traditional lending activities have become less profitable. State regulators need to work with financial institutions to ease state and federal regulatory burdens.
- Talent Attraction: Community banks, particularly in rural sections of Missouri, are faced with an aging workforce and face difficulty attracting new talent. As management ages and ultimately retires, community banks will need to bring in new talent to fill these vacant roles. Communities in rural Missouri have faced a decrease in retention and attraction of young workers. Regional educational institutions should work with community banking leaders to develop educational programs that can serve as a talent development pipeline to ensure rural banks continue to have the workforce necessary to remain competitive.
- Promotion: Missouri, and the Midwest more broadly, have historically been viewed as “fly-over country” by much of the nation. Missouri must work to change this perception to increase business relocations and talent recruitment into the state. Working with regional economic development leaders and organizations such as the Missouri Partnership provide opportunities to promote Missouri as a great place to work and live. Missouri faces a unique opportunity to position itself as a low cost state to relocate financial services firms, while simultaneously providing firms a marketing opportunity that allows them to distance themselves from public outrage associated with the perceived excesses of Wall Street. The St. Louis region is particularly well-positioned to attract additional financial services firms, as the region has received increased national press coverage relating to its financial services sector due to its rapid growth in overall financial services employment since 2007.

- Transportation Infrastructure: Missouri must work to increase its transportation infrastructure, particularly with respect to nonstop and international flights. Financial services firms and professionals require access to major airports, as these professionals frequently travel. Increasing the number and availability of flights into major metropolitan areas will decrease the cost of doing business for the firms and employees.
- Angel Tax Credit: Missouri must work toward achieving an angel tax credit to promote investment in early stage businesses. State promotion of entrepreneurial activity will help to lead to increased formation of early stage venture capital and other financial services organizations. Additionally, increasing the national perception that Missouri is a leader in entrepreneurial activity will help to grow local entrepreneurs' access to out of state venture capital.

## **Legal Industry**

- Reasonable Tuition: During and after the Great Recession, Missouri lawyers have suffered high unemployment leading to downward pressure on wages. Additionally, the profession is facing a structural shift with clients less willing to absorb price increases in the billable hour, further limiting the profession's total income. While wage restraints limit the profession's growth, attorneys are facing high and increasing student debt loads. In 2011, 40 percent of all Missouri attorneys owed student loans with 58 percent owing in excess of \$80,000. Missouri must work to ensure tuition rates at Missouri law schools remain competitive to help keep overall debt loads low for new attorneys.
- Public Defender System: The Missouri public defender system and overall criminal justice system are areas of focus for the Missouri Bar Association. The 2013 legislative focus for the Missouri Bar Association is for the General Assembly to revise the Missouri Criminal Code to allow for the more efficient administration of criminal justice. Addressing this issue can help to address workload concerns for the Missouri public defender system.

## **Engineering & Architecture Industry**

- Infrastructure Funding: A challenge facing this industry is the limited amount of funding currently available to support infrastructure improvements across the state. Passage of legislation to better fund development of infrastructure throughout the state is needed. Unique alternatives to ensure continued funding at levels needed for development and maintenance of roads and highways are needed as revenue from gas taxes has remained largely stagnant due to improvements in fuel efficiency.
- Female and Minority Recruitment: Engineering firms within Missouri face challenges in recruiting female and minority professionals. These challenges can be attributed to low overall numbers of female and minority graduates from engineering programs and difficulty in recruiting talent from outside Missouri. Working with educators to promote science and math education to female and minorities at a young age can help to increase the number of individuals who would potentially pursue a career in engineering. Increased promotion of Missouri as a place to relocate for employment opportunities targeted at these demographic segments could help to increase engineering firms' ability to recruit needed talent from outside Missouri.

## Employment and Establishment Data:

The Financial and Professional Services Industry encompasses three niches: Financial Services, Professional Services, and Customer Care Centers. This industry involves consulting, finance, insurance, marketing, and legal services.

Leading the way in the Financial and Professional Service Industry is Depository Credit Intermediation with 40,813 occupations followed by Computer Systems Design and Related Services with 25,093 employed in Missouri and Business Support Services with a workforce of 23,825 in Missouri.

Location quotient (LQ) compares the regional share of economic activity in a particular industry to the national share of economic activity in the same industry. Missouri has high employment concentrations in Business Support Services with an LQ of 1.46 and Securities & Commodity Contracts Intermediation and Brokerage with a LQ of 1.31.

### 2011 Employment and Establishment Data for the Financial Target Industry

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
5211	Monetary Authorities-Central Bank	9	Suppressed	Suppressed	Suppressed
5221	Depository Credit Intermediation	2,448	40,813	\$48,289	1.18
5222	Nondepository Credit Intermediation	1,125	11,874	\$55,895	1.06
5231	Securities & Commodity Contracts Intermediation & Brokerage	992	11,559	\$109,983	1.31
5239	Other Financial Investment Activities	659	5,883	\$80,548	0.85
5241	Insurance Carriers	1,217	21,869	\$64,644	0.94
5242	Agencies, Brokerages, & Other Insurance Related Activities	3,727	20,569	\$59,625	1.17
5251	Insurance and Employee Benefit Funds	72	711	\$76,649	0.75
5411	Legal Services	3,262	20,260	\$70,597	0.91
5412	Accounting, Tax Preparation, Bookkeeping, & Payroll Svcs	2,476	17,902	\$49,852	1.00
5415	Computer Systems Design and Related Services	3,081	25,093	\$81,182	0.82
5416	Management, Scientific, and Technical Consulting Services	2,105	10,242	\$69,452	0.48
5418	Advertising, Public Relations, and Related Services	959	8,224	\$57,345	0.97
5614	Business Support Services	989	23,825	\$34,712	1.46

Source: 2011 Quarterly Census of Employment and Wages, BLS

## Occupations:

The Financial and Professional Services Industry top long-term training occupations include Accountants and Auditors, Lawyers and Computer System Analysts. Leading moderate-training occupations are General and Operations Managers, Computer Support Specialists and Paralegals and Legal Assistants. Short-term training occupations include Customer Service Representatives, Tellers and General Office Clerks.

### 2011 Top Financial Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
<b>Long Term Training</b>				
13-2011	Accountants and Auditors	11,388	\$61,850	1.16
23-1011	Lawyers	7,515	\$107,490	0.90
15-1121	Computer Systems Analysts	4,952	\$77,670	1.27
49-2011	Computer, Automated Teller, and Office Machine Repairers	4,503	\$73,740	0.76
15-1132	Software Developers, Applications	4,169	\$83,350	1.12
<b>Moderate Training</b>				
11-1021	General and Operations Managers	4,641	\$89,590	1.21
15-1150	Computer Support Specialists	3,825	\$46,380	1.23
23-2011	Paralegals and Legal Assistants	3,064	\$47,380	0.89
51-1011	First-Line Supervisors of Production and Operating Workers	190	\$41,100	1.10
13-1032	Insurance Appraisers, Auto Damage	92	\$53,620	1.01
<b>Short Term Training</b>				
43-4051	Customer Service Representatives	17,690	\$30,800	1.04
43-3071	Tellers	12,090	\$23,500	1.19
41-3021	Insurance Sales Agents	10,074	\$60,690	1.36
43-9061	Office Clerks, General	8,494	\$29,300	1.14
43-3011	Bill and Account Collectors	8,062	\$29,730	1.36

Sources: 2011 Occupational Employment Survey, BLS

## Financial and Professional Services Industry Labor Analysis

MERIC performed the following labor analysis of the Financial and Professional Services Industry over the past six months by analyzing job postings in industry.

There were a total of 16,313 job postings in the Financial and Professional Services Industry during the previous 6 months. The top occupation was Tellers with 856 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Although Teller was the top occupation, the majority of job postings (52%) were found in the “Later” category.

Top Job Postings		
SOC code	Occupation	Job Openings
<b>Now Occupations</b>		
43-3071	Tellers	856
43-4051	Customer Service Representatives	585
43-6014	Secretaries And Administrative Assistants	192
43-3031	Bookkeeping, Accounting, And Auditing Clerks	102
43-4131	Loan Interviewers And Clerks	97
43-9061	Office Clerks, General	81
43-3011	Bill And Account Collectors	77
49-9071	Maintenance And Repair Workers	60
41-9041	Telemarketers	59
33-9032	Security Guards	59
<b>Next Occupations</b>		
41-4012	Sales Representatives, Wholesale And Manufacturing	414
15-1151	Computer User Support Specialists	290
23-2011	Paralegals And Legal Assistants	271
43-6011	Executive Secretaries And Executive Admin. Assistants	228
43-1011	First-Line Supervisors Of Office And Admin. Support Workers	144
41-3099	Sales Representatives, Services	131
11-9199	Managers	128
29-1141	Registered Nurses	99
41-1012	First-Line Supervisors Of Non-Retail Sales Workers	93
43-6012	Legal Secretaries	65
<b>Later Occupations</b>		
15-1121	Computer Systems Analysts	597
15-1132	Software Developers, Applications	490
23-1011	Lawyers	485
15-1131	Computer Programmers	407
13-1111	Management Analysts	342
41-3031	Sales Agents, Financial Services	336
15-1199	Information Technology Project Managers	286
13-2072	Loan Officers	274
13-2051	Financial Analysts	250
11-1021	General And Operations Managers	250

## Financial and Professional Services Industry Skills and Certificates

Top 10 Specialized Skills	
Description	Job Openings
Accounting	1,748
Sales	1,494
Business Process	973
SQL	933
Business Development	896
Oracle	893
Product Sale And Delivery	815
Underwriting	664
Mathematics	630
Scheduling	608

Top 10 Basic Skills	
Description	Job Openings
Communication Skills	5,623
Writing	4,092
Training	3,555
Organizational Skills	3,384
Customer Service	3,280
Leadership	2,917
Problem Solving	2,862
Microsoft Excel	2,626
Management	2,302
Project Management	2,250

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## HEALTHCARE SCIENCES AND SERVICES

### INDUSTRY COUNCIL

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#### Recommendations:

1. **Medicaid Expansion:** Expand the Medicaid system to broaden the eligibility for Missourians. Under the Affordable Care Act, the federal reimbursement of Disproportionate Share Hospital payments will be reduced a projected \$400 million. Without increased numbers of insured patients, this reduction in funds and the continued provision of charity care will affect the delivery of health care services and the stability of health care employment throughout the state. Without the expansion of Medicaid, all health care providers and facilities will realize an increased financial burden, particularly in the rural hospitals.
2. **Workforce Growth:** Maintain and grow the health care workforce, through the expansion of high school vocational programs, community college and university health care curriculums. The introduction of health care sector jobs should be made early and throughout the education process. Opportunities in health care careers should also be targeted to underemployed and dislocated adult workers. Recruitment for health care careers should be incentivized and prioritized through future and current initiatives including Innovation Campus, MOHealthWINS and the A+ Scholarship Program. Currently 80% of Missouri is in a Health Professional Shortage Area, and the workforce is aging. Half of all Missouri physicians are over the age of 50; the average age of registered nurses is 46.5 years. In addition, highly specialized surgeons and other medical specialists are at great risk of leaving the state without caps on Missouri's medical malpractice claims.
3. **Public Health Funding:** Aggressively address public health issues that affect all Missourians through increased state funding for public health funding. This increase in funding could create school-based programs and initiatives to improve at-risk populations with education and outreach in nutrition, wellness and exercise. Approximately 30 percent of all Missouri adults are classified as obese and 21 percent of adults smoke. Not only are today's workers at risk, but also the future workforce because obesity in Missouri's children is growing at an alarming rate. The impact of an unhealthy workforce is costly to Missouri employers. The negative economic impact is seen in reduced productivity, increased absenteeism and higher insurance premiums for all businesses.

#### Performance Metrics:

- Track the impact of the decision to opt in or out of Medicaid expansion and its impact on health care provider solvency and growth.
- Monitor and evaluate recruitment programs and progress a fully functioning health care database to collect and analyze the current and future workforce needs.
- Monitor health indices to track improvement or decline in the awareness and involvement in two critical areas: obesity and smoking cessation.

## Employment and Establishment Data:

The Health Care Sciences and Service Industry target encompasses three niches: Health Care Innovation, Health Sciences, and Health Services. This industry encompasses the delivery and administration of health care as well as health innovations that advance the ease and efficiency of delivering services to patients.

Missouri is home to a Health Care Industry workforce that employs 408,220. Leading the way in employment is General Medical and Surgical Hospitals with a workforce of 113,584, followed by Management of Companies and Enterprises with an employment of 61,213.

### 2011 Employment and Establishment Data for the Health Care Target Industry

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
5112	Software Publishers	180	2,590	\$83,775	0.48
5415	Computer Systems Design and Related Services	3,081	25,093	\$81,182	0.82
5416	Management, Scientific, and Technical Consulting Services	2,105	10,242	\$69,452	0.48
5417	Scientific Research and Development Services	320	10,018	\$88,685	0.79
5511	Management of Companies and Enterprises	1,484	61,213	\$87,143	1.60
6211	Offices of Physicians	3,421	39,940	\$84,135	0.85
6212	Offices of Dentists	1,992	13,734	\$46,670	0.82
6213	Offices of Other Health Practitioners	2,332	14,257	\$35,198	1.02
6214	Outpatient Care Centers	540	12,670	\$43,397	1.02
6215	Medical and Diagnostic Laboratories	297	3,856	\$51,254	0.83
6216	Home Health Care Services	400	18,245	\$27,712	0.80
6219	Other Ambulatory Health Care Services	168	4,149	\$37,523	0.81
6221	General Medical and Surgical Hospitals	121	113,584	\$49,944	1.30
6222	Psychiatric and Substance Abuse Hospitals	13	2,126	\$35,614	1.00
6223	Specialty (except Psychiatric & Substance Abuse) Hospitals	19	4,124	\$42,521	0.98
6231	Nursing Care Facilities	564	45,394	\$23,211	1.36
6232	Substance Abuse Facilities	631	12,878	\$21,001	1.13
6233	Community Care Facilities for the Elderly	387	11,291	\$21,144	0.74
6239	Other Residential Care Facilities	134	2,816	\$24,969	0.89
	<b>Total Health Care Industries</b>	<b>18,189</b>	<b>408,220</b>	<b>\$50,238</b>	<b>0.93</b>

Source: 2011 Quarterly Census of Employment and Wages, BLS



## Occupations:

The Health Care Industry top long-term training occupations include Physicians and Surgeons, Physical Therapists and Health Care Social Workers. Leading moderate-training occupations are Registered Nurses, Nursing Aides, Orderlies and Attendants and Licensed Practical and Vocational Nurses. Short-term training occupations include Medical Secretaries, Home Health Aides and General Office Clerks.

### 2011 Top Health Science Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
<b>Long Term Training</b>				
29-1069	Physicians and Surgeons, All Other	4,899	\$176,960	0.94
29-1123	Physical Therapists	3,949	\$72,510	1.11
21-1022	Healthcare Social Workers	3,532	\$41,770	1.69
29-2011	Medical and Clinical Laboratory Technologists	3,517	\$54,420	1.05
11-9111	Medical and Health Services Managers	3,512	\$80,610	0.78
<b>Moderate Training</b>				
29-1111	Registered Nurses	58,855	\$59,620	1.23
31-1012	Nursing Aides, Orderlies, and Attendants	35,823	\$22,050	1.38
29-2061	Licensed Practical and Licensed Vocational Nurses	14,577	\$37,100	1.21
29-2037	Radiologic Technologists and Technicians	5,582	\$49,580	1.25
11-1021	General and Operations Managers	5,240	\$89,590	1.21
<b>Short Term Training</b>				
43-6013	Medical Secretaries	20,439	\$30,060	2.03
31-1011	Home Health Aides	8,691	\$19,780	0.58
43-9061	Office Clerks, General	8,671	\$29,300	1.14
39-9021	Personal Care Aides	7,848	\$19,000	1.24
31-9092	Medical Assistants	7,613	\$27,080	0.78

Sources: 2011 Occupational Employment Survey, BLS



## Healthcare Industry Labor Analysis

MERIC performed the following labor analysis of the Healthcare Industry over the past six months by analyzing job postings in the industry.

There were a total of 23,328 job postings in the Healthcare Industry during the past 6 months. The top occupation was Registered Nurses.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Top Job Postings		
SOC code	Occupation	Job Openings
<b>Now Occupations</b>		
31-9092	Medical Assistants	509
43-6013	Medical Secretaries	375
43-6014	Secretaries And Admin. Assistants	252
43-9061	Office Clerks, General	199
43-4051	Patient Representatives	192
39-9021	Personal Care Aides	190
31-1011	Home Health Aides	176
29-2052	Pharmacy Technicians	130
43-4171	Receptionists And Information Clerks	125
43-4111	Interviewers, Except Eligibility And Loan	124
<b>Next Occupations</b>		
29-1141	Registered Nurses	3,456
29-2061	Licensed Practical And Licensed Vocational Nurses	903
29-2099	Health Technologists And Technicians	668
31-1014	Nursing Assistants	602
29-2071	Medical Records And Health Information Technicians	340
31-2021	Physical Therapist Assistants	336
31-2011	Occupational Therapy Assistants	243
43-1011	First-Line Supervisors Of Office And Admin. Support Workers	241
29-2055	Surgical Technologists	192
29-2041	Emergency Medical Technicians And Paramedics	192
<b>Later Occupations</b>		
29-1123	Physical Therapists	1,024
11-9111	Medical And Health Services Managers	812
29-1199	Health Diagnosing And Treating Practitioners	675
29-1122	Occupational Therapists	519
29-1127	Speech-Language Pathologists	395
29-1171	Nurse Practitioners	328
11-1021	General And Operations Managers	289
21-1029	Social Workers	161
13-1071	Human Resources Specialists	143
29-1051	Pharmacists	135

## Healthcare Industry Skills and Certificates

Top Basic Skills	
Description	Job Openings
Communication Skills	5,190
Training	3,945
Organizational Skills	3,314
Leadership	2,514
Writing	2,324
Computer Skills	2,182
Research	1,651
Planning	1,644
Problem Solving	1,486
Building Effective Relationships With Customers / Co-Workers	1,402

Top 10 Certificates	
Certificate	Job Openings
Registered Nurse	3,013
First Aid CPR	1,757
Basic Cardiac Life Support Certification	668
Occupational Therapist	590
Certified Nursing Assistant	540
Licensed Practical Nurse (LPN)	535
Certified Occupational Therapy Assistant	488
Licensed Physician	429
Nurse Practitioner	405
Physician's Assistant Certification	306

Top Specialized Skills	
Description	Job Openings
Patient Care	4,311
Scheduling	1,878
Physical Therapy	1,398
Occupational Therapy	1,278
Therapy	1,154
Medical Coding	1,121
Patient/Family Education And Instruction	1,100
Rehabilitation	1,089
Advanced Cardiac Life Support (ACLS)	1,065
Treatment Planning	1,026

## INFORMATION TECHNOLOGY

### INDUSTRY COUNCIL

CHALLENGE 1	FINDINGS	PENDING OPPORTUNITIES
No distinction between companies that create technology and those that are dependent on the use of IT products and services	<ul style="list-style-type: none"> <li>IT occupations identify three times more jobs than current IT NAICS code industries</li> <li>Headquarters companies employ the highest percentage of IT employees</li> </ul>	<ul style="list-style-type: none"> <li>Align industry sectors to the MO-IT ECOSYSTEM based on their IT staffing/talent needs</li> <li>Identify growth of IT occupations in terms of SOC (standard occupational classification) codes</li> </ul>
CHALLENGE 2	FINDINGS	PENDING OPPORTUNITIES
A sustainable IT workforce available for the technology needs of business to grow and retain companies in Missouri	The supply of IT workers varies geographically throughout Missouri and typically does not match the demand and needs of companies	<ul style="list-style-type: none"> <li>Compile data by industry sectors to examine the significance of IT talent relative to the Missouri economy</li> <li>Enhance policy makers understanding that Missouri's economic growth and success, regardless of the industry sector, is dependent on Information Technology</li> <li>Further education/training to elevate skill levels with the IT industry</li> </ul>
CHALLENGE 3	FINDINGS	PENDING OPPORTUNITIES
More access to capital needed for the burgeoning IT community in Missouri to grow and retain companies in Missouri	<ul style="list-style-type: none"> <li>Enhance policy makers understanding of the importance and value of IT with regards to significance of economic health and growth in Missouri across all industry sectors</li> <li>"Missouri Angel and Venture Investment Act" (MOAVIA) would incentivize private investors to invest in Missouri businesses; thus, enhancing the growth of Missouri's economy based on high quality and high paying "knowledge-based" jobs</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing education of legislators through a Freshman Tour, similar to MOBIO, highlighting IT presence and opportunities across Missouri</li> <li>Develop programs to raise awareness of IT within Missouri, such as Technology Expo</li> <li>Address the expansion &amp; growth funding gap for Missouri IT companies</li> <li>A workable and sustainable tax credit program in mid-2013</li> </ul>

CHALLENGE 4	FINDINGS	PENDING OPPORTUNITIES
The successful ITEN program, funded in part by MTC, to assist IT start-ups to obtain capital funding is limited to St. Louis	<ul style="list-style-type: none"> <li>• The ITEN program process does not exist outside St. Louis</li> <li>• KCNext is not focused on Entrepreneurship</li> <li>• Other regions within Missouri will benefit from state-wide-like ITEN program</li> </ul>	ITEN is proactively seeking partners and opportunities to share Best Practices across Missouri
CHALLENGE 5	FINDINGS	PENDING OPPORTUNITIES
Despite the fact that the data center niche is experiencing the highest growth of any IT innovation due to cloud computing, the tax climate for data centers in Missouri continues to be anti-competitive compared to adjacent states	At the risk of being left behind, pending data center legislation deserves immediate attention	<ul style="list-style-type: none"> <li>• Public testimonials conducted by data center business owners to educate the policy makers on the economic value of growing and expanding the data center niche across Missouri</li> <li>• Incorporate the economic value of the data center niche in a Freshman Tour of legislators end of November</li> </ul>

## Employment and Establishment Data:

The Information Technology Industry provides a key business function in today's knowledge economy. Much more than setting up computers and other hardware, these firms help businesses better use information in all aspects of company operations.

Missouri is home to an Information Technology Industry that employs 96,082 workers. Computer Systems Design and Related Services have the largest number of jobs with an employment of 25,123 in Missouri earning an average wage of \$81,206. Business Support Services employs 23,819 workers in Missouri.

Location quotient compares the regional share of economic activity in a particular industry to the national share of economic activity in the same industry. Missouri's overall Information Technology location quotient (LQ) compared to the nation is 0.89. Missouri has high employment concentrations in Data Processing Hosting and Related Services with an LQ of 2.04 and Business Support Services with a LQ of 1.46.

**2011 Employment and Establishment Data for the Information Technology Target Industry**

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
<b>Total Private Sector Industries</b>		<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
5112	Software Publishers	179	2,590	\$83,759	0.48
5182	Data Processing, Hosting, and Related Services	253	9,995	\$114,283	2.04
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	229	2,026	\$45,944	0.85
5414	Specialized Design Services	460	1,542	\$52,255	0.67
5415	Computer Systems Design and Related Services	3,086	25,123	\$81,206	0.82
5416	Management, Scientific, and Technical Consulting Services	2,107	10,249	\$69,452	0.48
5417	Scientific Research and Development Services	321	10,019	\$88,677	0.79
5419	Other Professional, Scientific, and Technical Services	1,559	10,720	\$34,714	0.91
5614	Business Support Services	996	23,818	\$34,749	1.46
<b>Total Strategic Initiative Information Tech. Target Industries</b>		<b>9,190</b>	<b>96,082</b>	<b>\$66,329</b>	<b>0.89</b>

Source: 2011 Quarterly Census of Employment and Wages, BLS

## Occupations

Information Technology Occupations in Missouri's total 76,180, which comprises two percent of Missouri's total occupations. Leading the way in IT occupations are Computer Support Specialists with an employment of 15,670 and an average wage of \$46,390 and Application Software Developers with 12,250 employment and \$83,350 average wage.

### 2011 Information Technology Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
<b>Total, All Occupations</b>		<b>2,591,020</b>	<b>\$40,500</b>	
11-3021	Computer and Information Systems Managers	4,800	\$109,070	0.79
15-1142	Network and Computer Systems Administrators	8,010	\$70,180	1.16
15-1121	Computer Systems Analysts	12,470	\$77,670	1.27
15-1133	Software Developers, Systems Software	4,830	\$82,910	0.62
15-1131	Computer Programmers	6,840	\$71,190	1.06
15-1141	Database Administrators	3,240	\$71,460	1.48
15-1132	Software Developers, Applications	12,250	\$83,350	1.12
15-1150	Computer Support Specialists	15,670	\$46,380	1.23
15-1799	Computer Occupations, All Other	2,730	\$77,930	0.76
15-1179	Information Security Analysts, Web Developers, and Computer Network Architects	5,070	\$80,740	0.92
15-1111	Computer and Information Research Scientists	140	\$88,800	0.27
17-2061	Computer Hardware Engineers	130	\$80,770	0.09
<b>Total IT Occupations</b>		<b>76,180</b>		

Sources: 2011 Occupational Employment Survey, BLS

## Information Technology Industry Labor Analysis

MERIC performed the following labor analysis of the Information Technology Industry over the past six months by analyzing job postings in the industry.

There were a total of 3,050 job postings in the Information Technology Industry during the previous six months. The top occupation was Applications Software Developers with 291 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Over one-half (68%) of jobs posted for this industry fell into the “Later” category, indicating this is an industry that demands technical and skilled labor.

Top Job Postings		
SOC Code	Occupations	Job Openings
<b>Now Occupations</b>		
49-9071	Maintenance And Repair Workers, General	37
43-4051	Customer Service Representatives	30
53-7062	Laborers And Freight, Stock, And Material Movers, Hand	26
51-9061	Inspectors, Testers, Sorters, Samplers, And Weighers	26
43-6014	Secretaries And Administrative Assistants	19
51-2099	Assemblers And Fabricators, All Other	19
43-4071	File Clerks	15
51-2023	Electromechanical Equipment Assemblers	12
51-4011	Computer-Controlled Machine Tool Operators, Metal And Plastic	11
49-9099	Installation, Maintenance, And Repair Workers	7
<b>Next Occupations</b>		
15-1151	Computer User Support Specialists	127
43-6011	Executive Secretaries And Executive Administrative Assistants	51
17-3013	Mechanical Drafters	37
41-4012	Sales Representatives, Wholesale And Manufacturing	33
11-9199	Managers, All Other	25
15-1152	Computer Network Support Specialists	20
41-3099	Sales Representatives, Services	13
13-1023	Purchasing Agents	12
33-9021	Private Detectives And Investigators	10
11-3051	Industrial Production Managers	10
<b>Later Occupations</b>		
15-1132	Software Developers, Applications	291
15-1131	Computer Programmers	210
15-1121	Computer Systems Analysts	117
15-1199	Computer Systems Engineers/Architects	116
15-1199	Information Technology Project Managers	112
15-1142	Network And Computer Systems Administrators	91
15-1133	Software Developers, Systems Software	88
15-1141	Database Administrators	88
19-3022	Survey Researchers	50
17-2141	Mechanical Engineers	46

## Information Technology Skills and Certifications

Top 10 Basic Skills	
Description	Job Openings
Communication Skills	1,032
Writing	721
Problem Solving	673
Organizational Skills	667
Troubleshooting	642
Training	590
Project Management	525
Leadership	497
Microsoft Office	424
Management	423

Top 10 Specialized Skills	
Description	Job Openings
SQL	392
Operating Systems	286
Oracle	280
Java	273
Linux	233
Unix	213
Extensible Markup Language (XML)	197
Software Engineering	188
Information Systems	186
System And Network Configuration	185

Top 10 Certificates	
Description	Job Openings
Project Management Certification (e.g. PMP)	58
Security+	42
Microsoft Certified Systems Engineer (MCSE)	22
Certified Information Systems Security Professional (CISSP)	22
Cisco Certified Network Associate	20
Certified Public Accountant	17
Network+ Certified	15
Vmware Certified Professional	12
Certified A+ Technician	11
Microsoft Certified Technology Specialist (MCTS)	8

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## TRANSPORTATION/LOGISTICS

### INDUSTRY COUNCIL

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The council included representatives from all modes of surface transportation and logistics. There was a general consensus that Missouri is perfectly positioned in location, available workforce and hard transportation assets to grow transportation employment over the next decade.

- **River Barge:** There are four operational public ports on the Mississippi River from St. Louis south to the Arkansas border, all of which have shown growth in both investment and activity. Two additional ports are planned in Jefferson County and one is under construction at St. Genevieve. All ports do and will enjoy ice-free year-round operation and all barge traffic from St. Louis south is not limited to 15 barge tows, as is the case north of St. Louis. In addition to these public ports there are numerous private dock facilities serving private industry along the river including a newly opened facility in South St. Louis which is capable of holding a 115 car unit grain train for off loading to barge.
- **Railroads:** All class I railroads either operate in Missouri or connect to other railroads at the eastern border of Missouri. Kansas City Southern, Union Pacific and BNSF have all increased their container/intermodal operations and facilities in Missouri. Norfolk Southern operates a thriving container operation in St. Louis and a large automobile shipping operation in Kansas City. The expansion of container freight increases the need for truck drivers as well as logistics professionals, freight forwarders, and consolidators.
- **Motor Carriers:** Both Kansas City and St. Louis are served by east-west interstate highways, as well as north-south interstate systems. All towns with significant population are served by four lane state and/or interstate highways. There are sporadic shortages of specialized equipment and drivers at various locations in the state. The expansion of double stack unit trains of fifty cars or more generate an additional need for truck drivers. Each such train will require 100 drivers to move the containers.

**Action Items for the Industry:** The employment recruitment and retention effort in the transportation sector must increase. The aging work force in all modes as well as new federal regulations on the trucking industry will require an aggressive hiring initiative. The difficulty centers upon: 1) the reluctance of potential hires to be away from home for extended times, and, 2) most, after high school graduation, have found other jobs before becoming 21 years of age and being eligible to work in interstate commerce. The council recommends an aggressive use of job fairs, advertising and public information to disseminate information on the advantages of employment in the transportation industry and available career paths that will not require extensive absence from home.



## Employment and Establishment Data:

The Transportation and Logistics Industry includes three niches: Freight Hauling, Warehousing, and Wholesalers. Logistics is the core of strategic supply chain management. An effective supply chain network is critical to profitability for businesses across all sectors because just-in-time inventory strategies are now commonplace among most national retailers, manufacturers, and service providers. Leading the way in the Logistics and Transportation Industry is Wholesale Electronic Markets and Agents and Brokers with an employment of 24,474 and General Freight Trucking with a labor force of 24,191.

**2011 Employment and Establishment Data for the Transportations and Logistics Target Industry**

NAICS	Industry	2011 Establishments	2011 Employment	2011 Average Wage	2011 Employment Location Quotient
	<b>Total Private Sector Industries</b>	<b>164,946</b>	<b>2,160,227</b>	<b>\$41,724</b>	
3219	Other Wood Product Manufacturing	241	4,530	\$30,917	1.19
3261	Plastics Product Manufacturing	232	11,426	\$42,785	1.13
3324	Boiler, Tank, and Shipping Container Manufacturing	48	2,284	\$47,499	1.29
4231	Motor Vehicle & Motor Vehicle Parts & Supplies Merchant Wholesalers	560	9,015	\$41,497	1.44
4233	Lumber and Other Construction Materials Merchant Wholesalers	318	3,892	\$48,936	1.06
4235	Metal & Mineral (except Petroleum) Merchant Wholesalers	182	2,308	\$58,936	1.00
4236	Electrical and Electronic Goods Merchant Wholesalers	367	5,296	\$60,068	0.85
4237	Hardware & Plumbing/Heating Equip. & Supplies Merchant Wholesalers	381	4,616	\$53,913	1.05
4238	Machinery, Equipment, & Supplies Merchant Wholesalers	1,109	13,325	\$56,570	1.07
4241	Paper and Paper Product Merchant Wholesalers	208	3,893	\$57,773	1.60
4244	Grocery and Related Product Merchant Wholesalers	564	11,446	\$47,605	0.80
4245	Farm Product Raw Material Merchant Wholesalers	187	2,400	\$50,832	1.63
4246	Chemical and Allied Products Merchant Wholesalers	251	3,024	\$65,071	1.23
4247	Petroleum and Petroleum Products Merchant Wholesalers	298	1,906	\$49,573	1.03
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	85	3,573	\$50,611	1.08
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	669	7,324	\$42,049	1.14
4251	Wholesale Electronic Markets and Agents and Brokers	6,781	24,474	\$78,626	1.45
4811	Scheduled Air Transportation	38	3,631	\$60,302	0.44
4812	Nonscheduled Air Transportation	43	275	\$67,731	0.34
4821	Rail Transportation	3	Suppressed	Suppressed	Suppressed
4832	Inland Water Transportation	14	352	\$70,038	0.82
4841	General Freight Trucking	1,375	24,191	\$43,714	1.34
4842	Specialized Freight Trucking	1,552	11,340	\$36,914	1.42
4881	Support Activities for Air Transportation	124	2,356	\$41,127	0.74
4882	Support Activities for Rail Transportation	57	1,026	\$48,303	2.15
4883	Support Activities for Water Transportation	27	597	\$52,018	0.33
4884	Support Activities for Road Transportation	234	1,745	\$29,928	1.05
4885	Freight Transportation Arrangement	405	3,395	\$45,766	0.95
4921	Couriers and Express Delivery Services	229	6,650	\$42,929	0.70
4931	Warehousing and Storage	363	12,163	\$41,270	0.94
5416	Management, Scientific, and Technical Consulting Services	2,105	10,242	\$69,452	0.48

Source: 2011 Quarterly Census of Employment and Wages, BLS

## Occupations:

The Transportation and Logistics Industry top long-term training occupations include Wholesale and Manufacturing Sales Representatives, Accountants and Auditors and Management Analysts. Leading moderate training occupations are General and Operation Managers, First Line Supervisors of Productions and Operating Workers and Computer Support Specialists. Short-term training occupations include Heavy and Tractor-Trailer Truck Drivers, Freight Stock Laborers and Material Movers, and Office Clerks.

### 2011 Top Transportation Occupational Employment

Occupation Code	Title	2011 Employment	2011 Average Wage	2011 Occupation Location Quotient
Total, All Occupations		2,591,020	\$40,500	
Long Term Training				
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2,816	\$74,120	0.81
13-2011	Accountants and Auditors	2,030	\$61,850	1.16
13-1111	Management Analysts	1,185	\$78,460	0.60
11-2022	Sales Managers	821	\$102,870	0.83
11-1011	Chief Executives	808	\$153,390	1.33
Moderate Training				
11-1021	General and Operations Managers	4,915	\$89,590	1.21
51-1011	First-Line Supervisors of Production and Operating Workers	1,198	\$51,900	1.03
15-1150	Computer Support Specialists	1,063	\$46,380	1.23
49-3011	Aircraft Mechanics and Service Technicians	1,059	\$54,850	0.92
53-2012	Commercial Pilots	292	\$81,550	1.10
Short Term Training				
53-3032	Heavy and Tractor-Trailer Truck Drivers	28,923	\$38,180	1.29
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	18,849	\$58,020	1.03
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	12,673	\$25,580	0.88
43-9061	Office Clerks, General	6,424	\$29,300	1.14
53-3033	Light Truck or Delivery Services Drivers	5,435	\$32,520	0.80

Sources: 2011 Occupational Employment Survey, BLS

## Logistics Industry Labor Analysis

There were a total of 4,350 job postings in the Financial and Professional Services Industry for the 6 month period. The top occupation was Heavy and Tractor-Trailer Truck Drivers with 904 job postings.

Occupations are divided into “Now,” “Next” and “Later” categories based on the typical training and education required. “Now” occupations usually require 1-12 months of on-the-job training. “Next” occupations usually require more than one year of on-the-job training and can additionally need specific work experience. These occupations often require an associate’s degree or vocational certificate. “Later” occupations usually require a bachelor’s degree or higher and may need specific work experience.

Almost one-half of the job postings (48%) for this industry and time period fell into in the Now category, with truck drivers making up one-fourth of the total job postings.

Top Job Postings		
SOC code	Occupation	Job Openings
<b>Now Occupations</b>		
53-3032	Heavy And Tractor-Trailer Truck Drivers	904
53-3033	Light Truck Or Delivery Services Drivers	246
53-7062	Laborers And Freight, Stock, And Material Movers	225
49-9071	General Maintenance And Repair Workers	80
43-4051	Customer Service Representatives	77
43-5081	Stock Clerks	64
27-1026	Merchandise Displayers And Window Trimmers	48
33-9032	Security Guards	46
49-9099	Installation, Maintenance, And Repair Workers, All Other	39
43-6014	Secretaries And Admin. Assistants	24
<b>Next Occupations</b>		
41-4012	Sales Representatives, Wholesale And Manufacturing	235
43-6011	Executive Secretaries And Executive Admin. Assistants	56
49-3031	Bus And Truck Mechanics And Diesel Engine Specialists	32
53-2012	Commercial Pilots	29
53-1021	First-Line Supervisors Of Helpers, Laborers, And Material Movers	24
51-1011	First-Line Supervisors Of Production And Operating Workers	24
11-3051	Industrial Production Managers	23
43-1011	First-Line Supervisors Of Office And Admin. Support Workers	21
15-1151	Computer User Support Specialists	21
49-1011	First-Line Supervisors Of Mechanics, Installers, And Repairers	13
<b>Later Occupations</b>		
17-2141	Mechanical Engineers	105
15-1132	Software Developers, Applications	100
11-1021	General And Operations Managers	73
15-1199	Information Technology Project Managers	61
13-2011	Accountants and Auditors	67
15-1131	Computer Programmers	58
15-1121	Computer Systems Analysts	49
17-2051	Civil Engineers	41
13-1071	Human Resources Specialists	35
17-2071	Electrical Engineers	33

## Logistics Industry Skills and Certificates

Top 10 Basic Skills	
Description	Job Openings
Training	982
Communication Skills	960
Writing	684
Organizational Skills	658
Problem Solving	459
Microsoft Office	454
Management	438
Leadership	436
Customer Service	403
Microsoft Excel	389

Top 10 Specialized Skills	
Description	Job Openings
Sales	397
Repair	329
Mathematics	273
Accounting	207
Inspection	194
Forklift	165
Scheduling	144
Business Development	126
SQL	111
SAP	100

Top 10 Certificates	
Description	Job Openings
Commercial Driver's License	157
CDL Class A	118
Project Management Certification (e.g. PMP)	59
Forklift Operator Certification	39
Certified Public Accountant	35
Professional Development	30
Professional Engineer	29
Six Sigma Certification	29
Air Brake Certified	28
Automotive Service Excellence (ASE) Certification	19

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Dr. Keith Gary	Kansas City Life Sciences Institute	Kansas City
Michael Goins	Midwest Data	Rockport
Sharon Helwig	MO Department of Elementary & Secondary Education	Jefferson City
Michael Jenkins	Essex Manufacturing Division	St. Louis
Jasen Jones	Southwest Workforce Investment Board	Joplin
Rhonda Jones	Adult Learning Center	St. Louis
Ben Jones	City Utilities of Springfield	Springfield
Cynthia Kramer	SCOPE	St. Louis
Birdie LeGrand	Nordenia USA	Jackson
Clyde McQueen	Full Employment Council	Kansas City
Zora Mulligan	Missouri Community College Association	Jefferson City
Leslie Porth	MO Hospital Association	Jefferson City
David Russell	MO Department of Higher Education	Jefferson City
Glenda Terrill	Division of Workforce Development - MoWIB	Jefferson City
William Thornton	Department of Higher Education	Jefferson City
Missy Wade	Energysys	Warrensburg
Marsha Wallace	Empire District Electric Company	Joplin
Terrence Walsh	International Association of Heat & Frost Insulators and Allied Workers Union, Local #1	St. Louis
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## Members, Industry Councils

Advanced Manufacturing		
Dusty Cruise (Chair)	Missouri Enterprise	Rolla
Ashok Agrawal	St. Louis Community College	St. Louis
Delbert Day	Missouri University of Science & Technology	Rolla
Doug Pfitzinger	GKN North America Incorporated	St. Louis
Matthew O'Keefe	Missouri University of Science and Technology	Rolla
James Castle	Boeing	St. Louis
Jim Thompson	University of Missouri	Columbia
John Bell	Steelville Manufacturing	Steelville
Linda Greaser	Proctor and Gamble Paper Products	Cape Girardeau
Ming Leu	Missouri University of Science and Technology	Rolla
Nick Sanazaro	Meramec Electrical	Cuba
Rick L. Lavelock	Honeywell Federal Manufacturing & Technologies	Kansas City
Terry Henderson	Bodine Aluminum, Incorporated	Troy
Tom Hilmes	CNH Reman	Springfield
Tony Reinhardt	Ford Motor Co Kansas City Assembly Plant	Kansas City
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Bioscience		
Eric Gulve (Chair)	BioGenerator	St. Louis
Jim Anderson	Mobius Therapeutics	St. Louis
Mark Bamforth	Gallus BioPharmaceuticals	Berkley
Michael Chippendale	Division of Plant Sciences, University of Missouri	Columbia
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Kelly Gillespie	Missouri Biotechnology Association	Jefferson City
Marc Linit	MU College of Agriculture	Columbia
Dale Ludwig	MO Soybean Association	Jefferson City
Joseph Monahan	Confluence Life Sciences	St. Louis
Russell Odegard	DynaLabs	St. Louis
Jason Robertson	CRB Consulting Engineers, Inc.	Kansas City
Ryan Schmidt	Soy Labs, LLC	Mexico
Jack Schultz	Bond Life Sciences Center, University of Missouri	Columbia
Phil Simmons	Sigma Life Sciences	St. Louis
Duane Simpson	Monsanto	St. Louis
Brent Taylor	Acceleration Laboratory Services	Lee's Summit
Kat Wood	SCD Probiotics	Kansas City
Kim Young	Kansas City Area Development Council	Kansas City
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Energy Solutions		
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Dr. Stanley R. Bull	MRI Global & Nat'l Renewable Energy Lab	Kansas City
Ralph Butler	Reactor Department, University of Missouri	Columbia
Josh Campbell	Missouri Energy Initiative	Jefferson City
Jeffrey Cannon	ProEnergy Services	Sedalia
Jeff Greig	Burns and McDonnell	Kansas City
Trey Davis	Missouri Energy Development Association	Jefferson City
Mark Dawson	Kansas City Power & Light	Lee's Summit
Steve Flick	Flick Seed Company	Kingsville
Deborah Frank	Missouri Botanical Garden	St. Louis
Floyd Gilzow	Missouri Public Utility Alliance	Columbia
Dane Glueck	Straight Up Solar	St. Louis
Erin Noble	Straight Up Solar	St. Louis
Joshua Harden	PSC Policy Advisor/Legal Counsel Office of Commissioner Robert Kenney	Jefferson City
Barry Hart	Association of Missouri Electric Cooperatives	Jefferson City
Steve Murray	American Water Co.	St. Louis
Ron Nowlin	EaglePicher Technologies	Joplin
Himadri B. Pakrasi	Washington University	St. Louis
Peter Pfeifer	University of Missouri	Columbia
Jim Hearing	Laclede Gas Company	St. Louis
Dr. Joseph Smith	Missouri University of Science & Technology	Rolla
Kevin Snyder	SRC Power Systems	Springfield
Gary Stacey	University of Missouri	Columbia
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Financial and Professional Services		
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Robert Espeland	U.S. Bancorp Community Development Corporation	St. Louis
Marilyn Bush	Bank of America	St. Louis
Talia Jackson	Burns & McDonnell, Program Management	Kansas City
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Mike Esser	Edward Jones	St. Louis
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Elise Ibendahl	CH2M	Richmond Heights
Adrian Keller	HNTB Corporation	Kansas City
Emily Meatte	Stifel Bank & Trust	St. Louis
Ward Nixon	US Bancorp CDC	St. Louis
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Healthcare Sciences and Services		
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Doug Ervin	Cerner Corporation	North Kansas City
Cary Hobbs	Centene Corporation	St. Louis
Kenny Jackson	MO State Medical Association	Jefferson City
Charlotte Martin	Gateway EDI / Trizetto	St. Louis
Nancie McAnagh	University of Missouri, Center for Health Policy	Columbia
Thomas McAuliffe	MO Foundation for Health	St. Louis
David Norton	Express Scripts	St. Louis
Richard Oliver	MU School of Health Professions	Columbia
William Peck	Washington University	St. Louis
Robert Puskas	Traxxsson LLC	St. Louis
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Carrie Sherer	Cerner	North Kansas City
Jo Stueve	Children's Mercy Hospitals and Clinics	Kansas City
Sandra Van Trease	BJC Healthcare	St. Louis
Tim Van Zandt	St. Luke's Hospital, Senior Director, Public Affairs	Kansas City
Brent VanConia	St. Mary's Health Center	Jefferson City
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Information Technology		
Greg Sullivan (Chair)	Global Velocity, Inc.	Clayton
Willem Bakker	Eagle Technologies	St. Louis
Jim Brasunas	Information Technology Entrepreneur Network	St. Louis
Chuck Bremer	Independent Business Consultant	St. Louis
Mike Burke	King Hershey, PC	Kansas City
Francis Chmelir	MOFAST	St. Louis
Steve Clark	Capgemini	Kansas City
Jay DeLong	St. Louis RCGA	St. Louis
Rick Holton	Holton Capital Group	St. Louis
Jonathan King	Venture St. Louis	St. Louis
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Frank Lamm	UNISYS	St. Louis
William J. Lemon	IT Enterprises	St. Louis
Bob Olwig	WWT	St. Louis
Patrick Murphy	Digital Realty Trust	St. Louis
Brad Pittenger	Xioling, LLC	St. Louis
Matthew Porter	Contegix	St. Louis
Jean Roberson	Appistry	St. Louis
Dave Robinson	Lockton LLC	Kansas City
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Dave Ryan	Eagle Picher	Monet
Mark Showers	RGA Re	Chesterfield
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Transportation/Logistics		
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Tom Crawford	MO Motor Carriers Association	Jefferson City
Keith Darling	AEP River Operations	St. Louis
Ben Jones	Union Pacific Railroad	Kansas City
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Thomas P. McKenna	City of Kansas City	Kansas City
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James S. Noble	University of Missouri-Columbia	Columbia
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